Let's Learn MATHEMATICS

BOOK ONE



Let's Learn
MATHEMATICS
BOOK ONE

A Textbook for Class 1

K. Ramachandran
V. P. Gupta

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
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FOREWORD

The study of mathematics has become indispensable in one's life due to its wide-ranging applications in the present technological society. Mathematics at the primary stage provides a child with the basic mathematical concepts and skills he would need to tackle real life problems. It cultivates thinking and reasoning skills and, therefore, strengthens the intellectual underpinnings of human social interactions. The present technological society requires daily the use of skills, such as estimating, problem-solving, interpreting data, measuring, predicting and applying mathematics to everyday life situations. The National Policy on Education 1986 (NPE) has rightly visualised mathematics as the vehicle to train a child to think, reason, analyse and articulate logically. Since quantitative treatment and measurements are being increasingly used in many other subjects, the relevance of mathematics is emphasized both in the context of the child's environment and in the context of the child's learning in other areas.

The present book, entitled "Let's Learn Mathematics – Book One", forms a part of the package of instructional materials in mathematics. The new curriculum developed in the light of the NPE has been the basis for its development. The book is a textbook-cum-workbook accompanied by a detailed Instructional Manual. Realizing that the children of 5+ age group do not possess reading ability and sufficient vocabulary, the concepts have been presented through visuals. The focus is on encouraging children to discover concepts and ideas, to look for interesting relationships and to develop their own generalizations. Emphasis is laid on providing young children with sufficient scope for acquiring insight into the basic mathematical concepts and motivating them to undertake activities in and outside the classroom.

Due to the special format and design of the book based on visuals, children may find it difficult to make out things/ideas without detailed instructions which could help them to discover and understand the concepts. It is the teacher who has to impart these detailed instructions to children, explaining how they have to go through and follow the pages. In order to help the teachers in this regard, a detailed instructional manual has been provided. With this special feature of the book, the role and responsibility of the classroom teacher emerges to be very significant. It is essential for the teacher to study the portion of the manual that corresponds to the text and then choose the best way of organizing teaching-learning activities.

The draft of the book was prepared by Shri K. Ramachandran and Dr. V. P. Gupta of the Department of Pre-School and Elementary Education (DPSEE), NCERT. The draft was discussed in a workshop held at the NIE Campus, New Delhi, in November 1986. The workshop was attended by practising teachers, subject experts and teacher-educators of training colleges. The final draft of the book was once again reviewed in a workshop held at the NIE Campus, New Delhi, in February 1987, wherein some teachers of Kendriya Vidyalayas and other schools of Delhi participated. In the light of the suggestions and reactions of the participants of the two workshops, the manuscript was further refined to the present form.

My appreciation and thanks are due to Prof. P. N. Dave, Head, DPSEE, and his colleagues Shri K. Ramachandran and Dr. V. P. Gupta who worked hard for bringing out this book.

I record my grateful thanks to all the participants of the two workshops for their valuable contributions towards the improvement of the book.

Suggestions from the users of this book for further improvement will be most welcome.

P.L. MALHOTRA

Director

National Council of
Educational Research and Training

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3. Smt. H. P. Shyamla, Demonstration School, Regional College of Education, Mysore

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3. Dr. H.N. Gupta, Reader, CIET, NCERT, New Delhi
4. Dr. Harmesh Lal, Research Associate, CIET, NCERT, New Delhi
5. Prof. K. Ramanathan, Government College of Education, Saidapet Madras
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7. Smt. V. Sharma, Bhartiya Vidya Bhawan, Kasturba Gandhi Marg, New Delhi
8. Smt. H.P. Shyamla, PGT, Demonstration School, Regional College of Education, Mysore
9. Shri K.B. Subramaniam, Lecturer, Regional College of Education, Bhopal
10. Smt. P. Subramaniam, Primary Teacher, Kendriya Vidyalaya, New Mehrauli Road, New Delhi

The Council is also grateful to the following who went through the final draft of this book and offered suggestions for its improvement in a workshop held for the purpose at New Delhi from 10 to 14 February 1987:

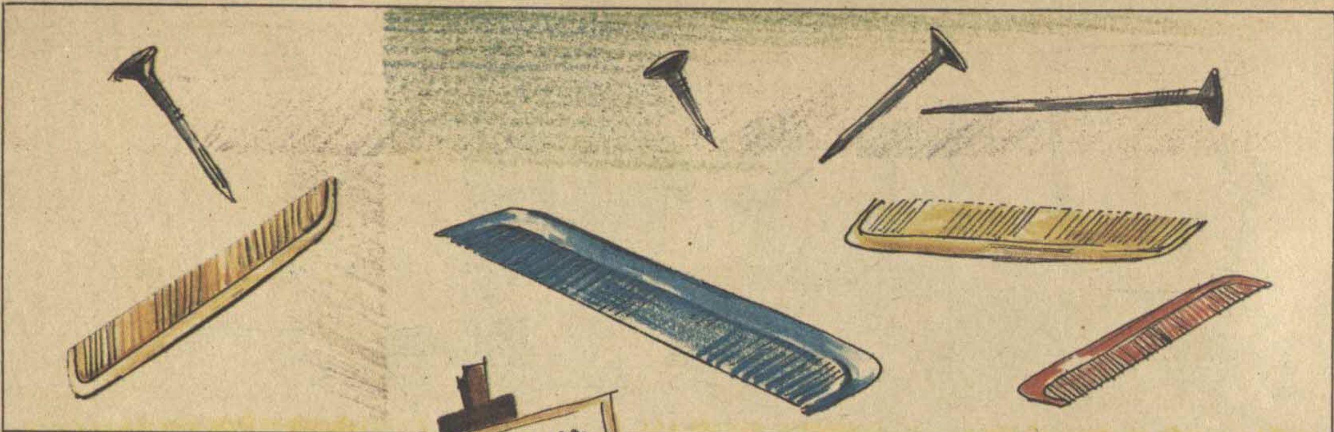
1. Smt. Padmavati, Kendriya Vidyalaya, Sector 2, R.K. Puram, New Delhi
2. Smt. Asha Sharma, Kendriya Vidyalaya, Sector 2, R.K. Puram, New Delhi

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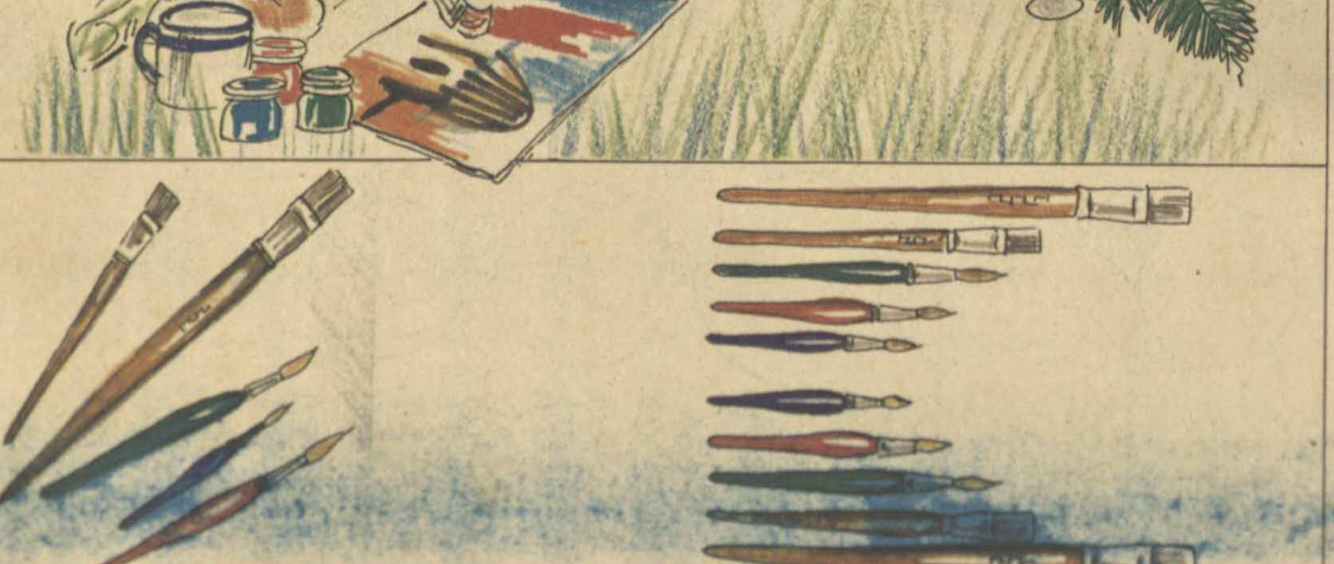
UNIT 1 Sizes, Shapes, Lengths, Positions BIG-SMALL



LONG-SHORT







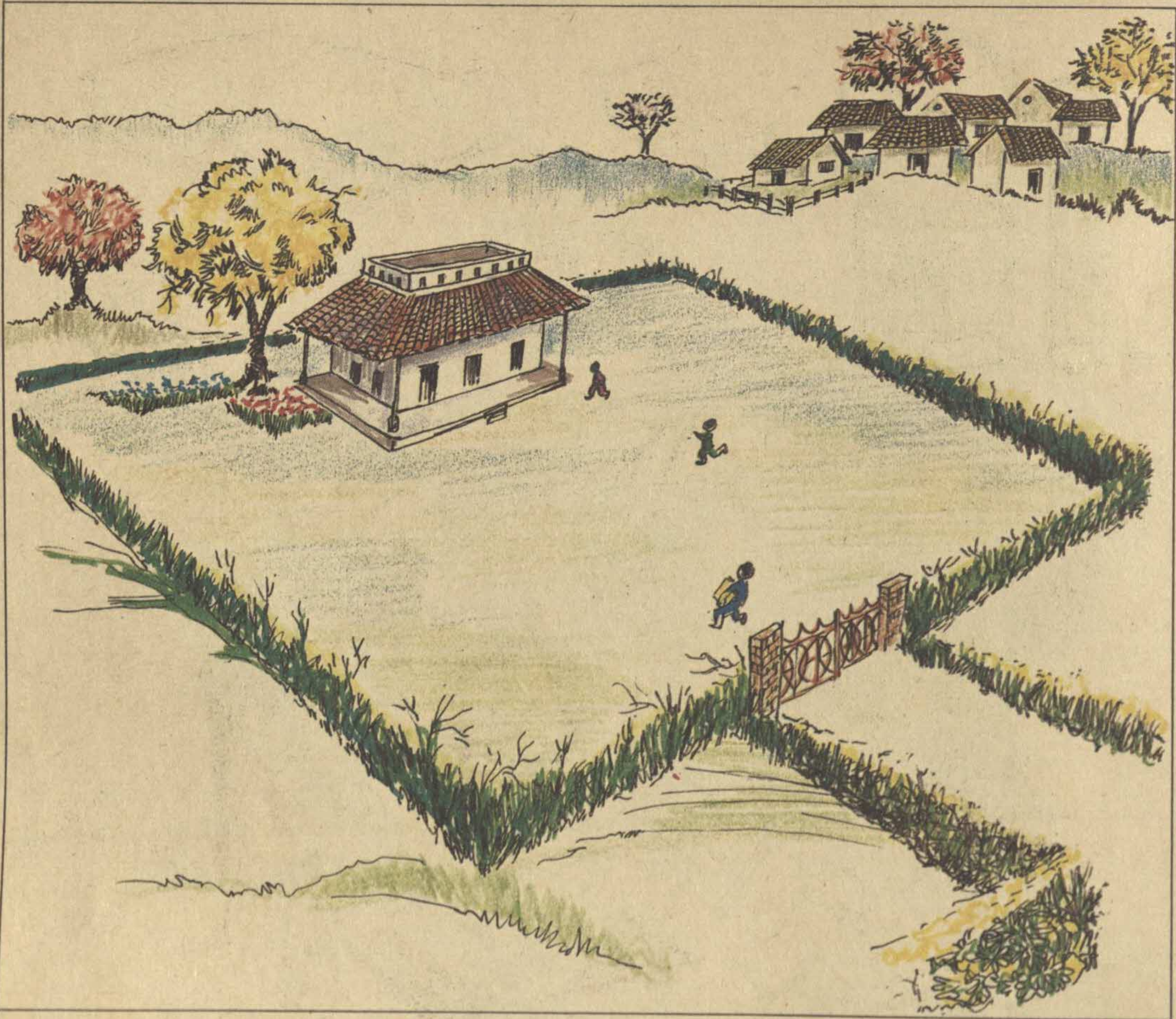


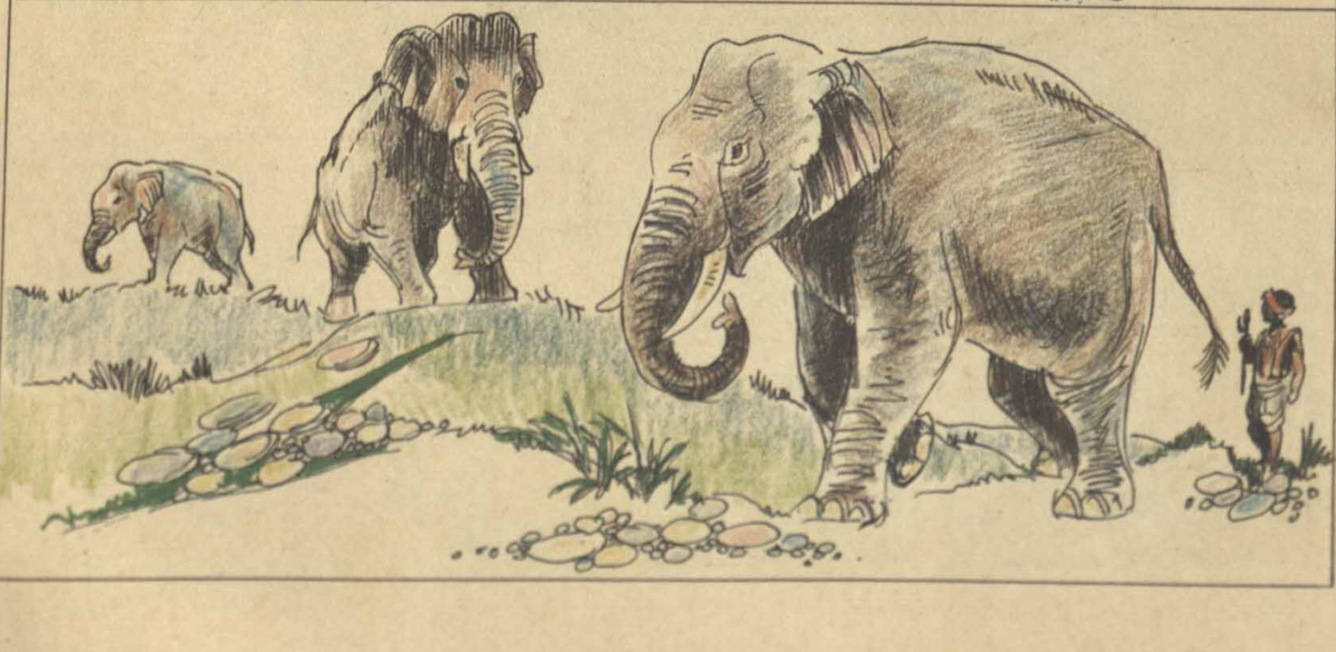
THICK-THIN





FAR-NEAR

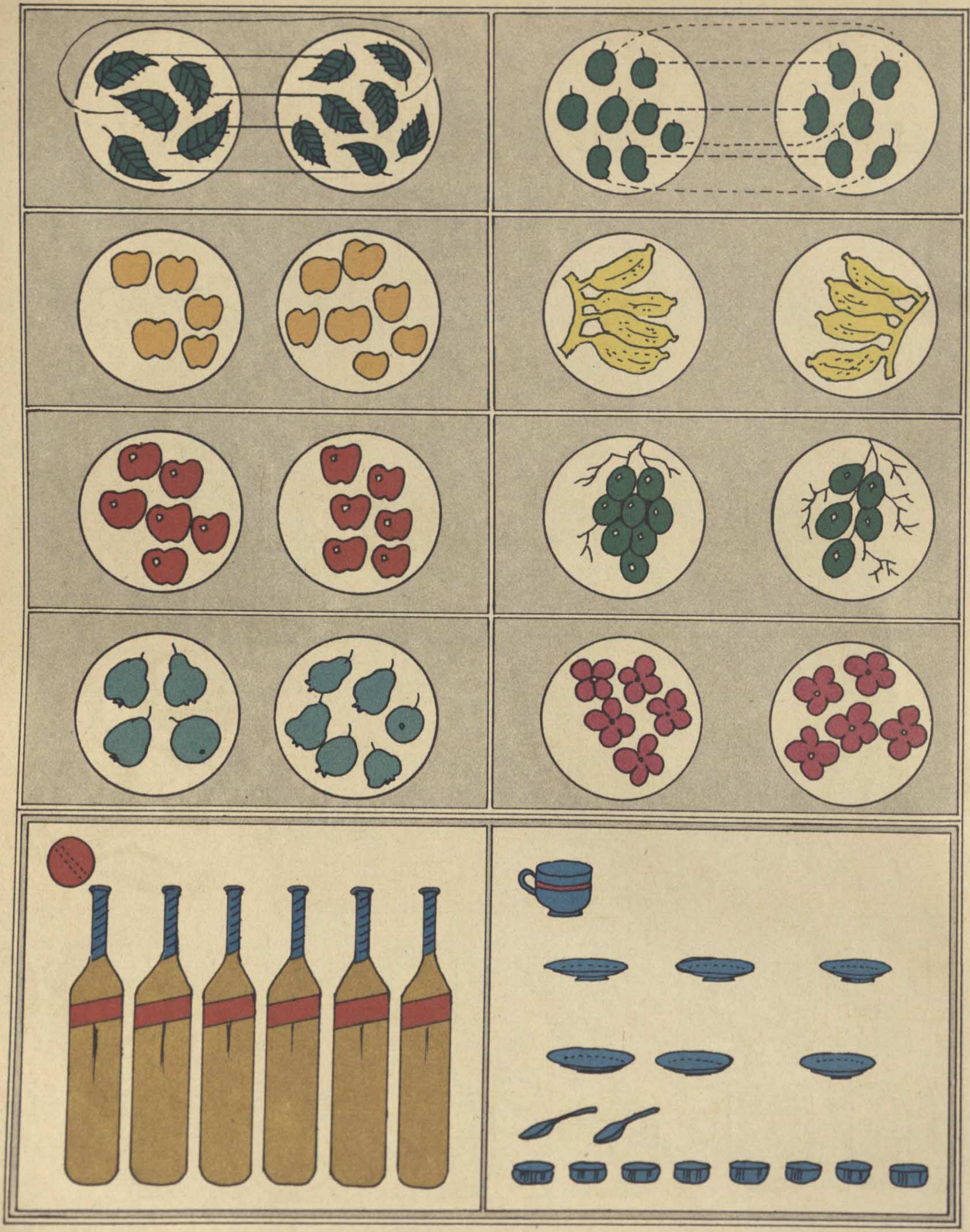




MORE-LESS

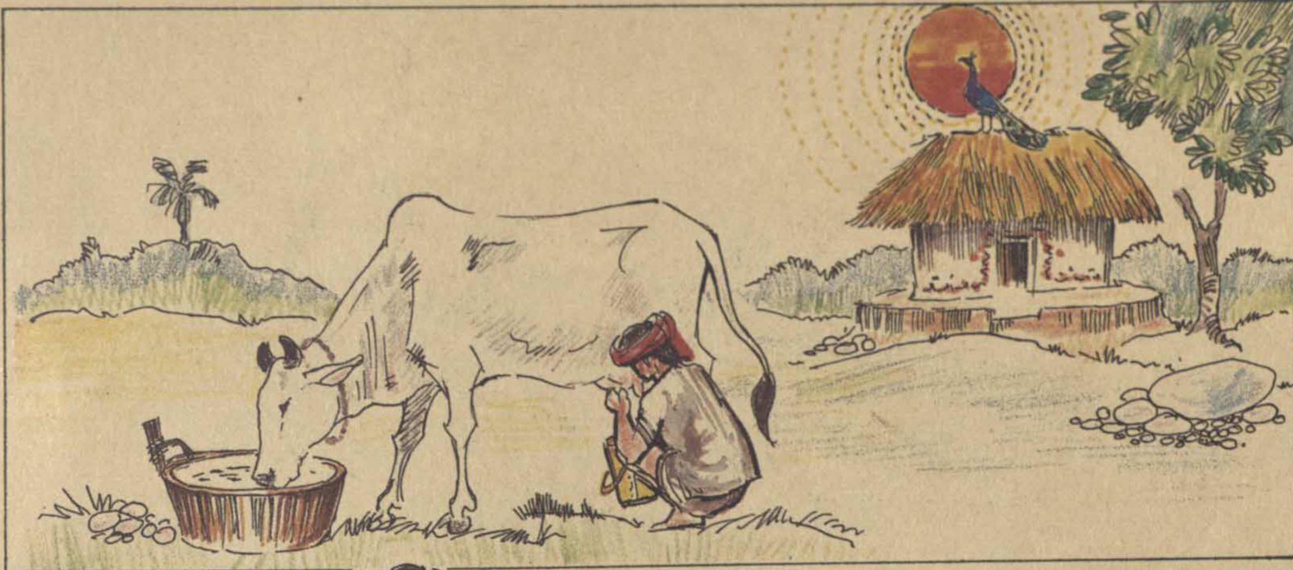


MORE-FEWER



UNIT 2 Numbers from ONE to NINE

ONE





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○ 1



○ 1

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TWO





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THREE





3



3



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FOUR

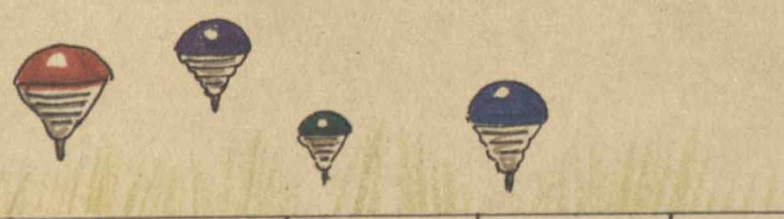




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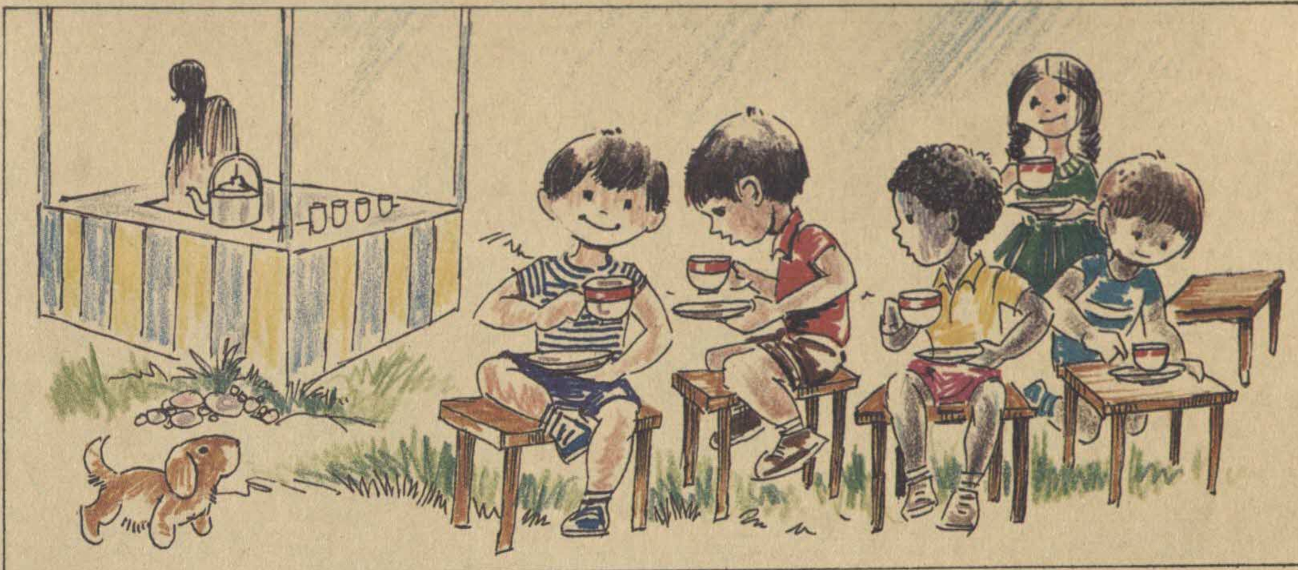


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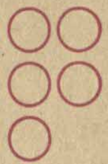


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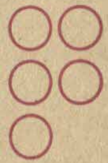




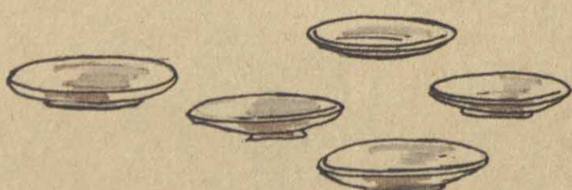


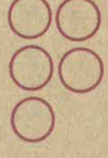
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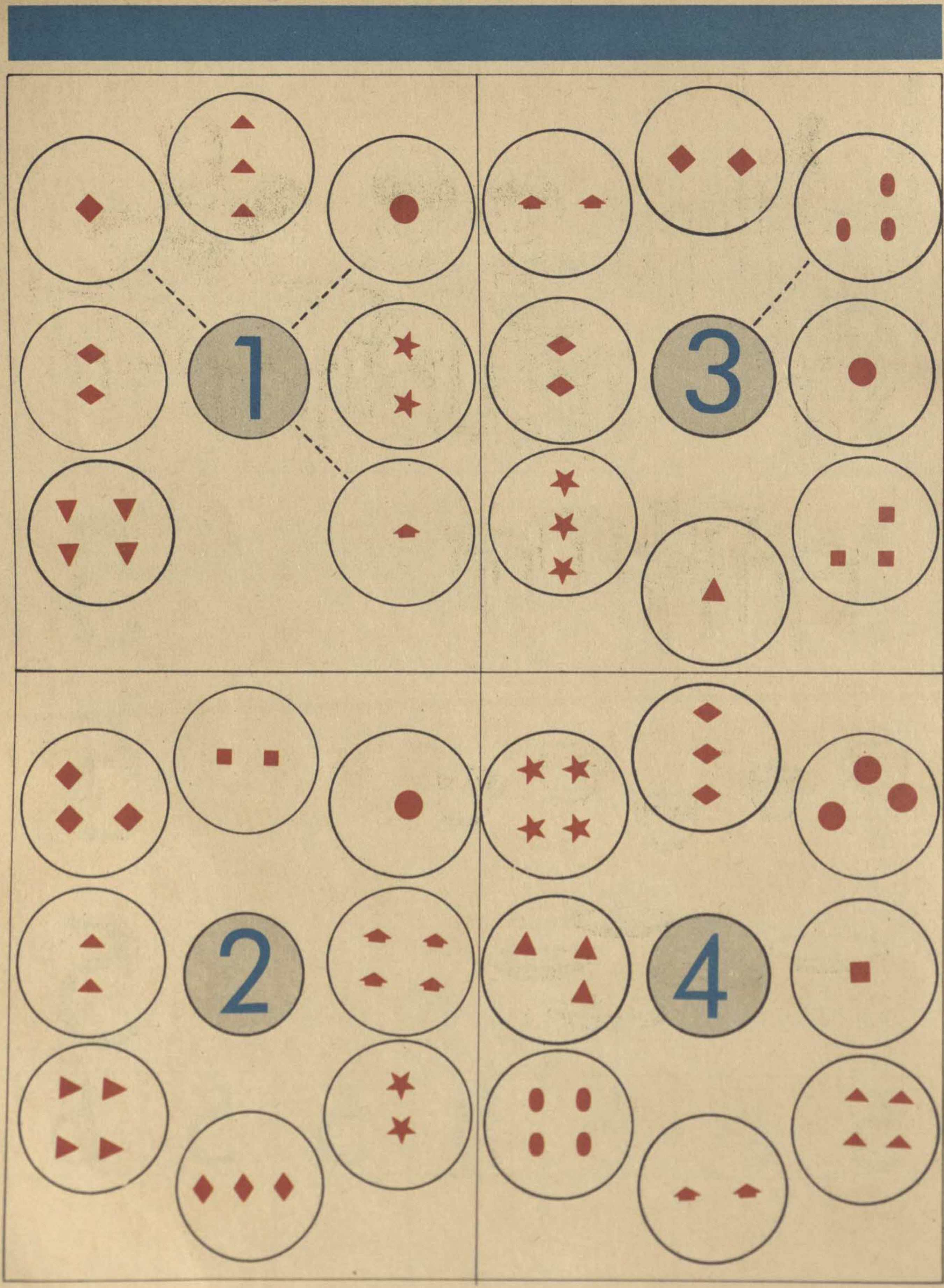
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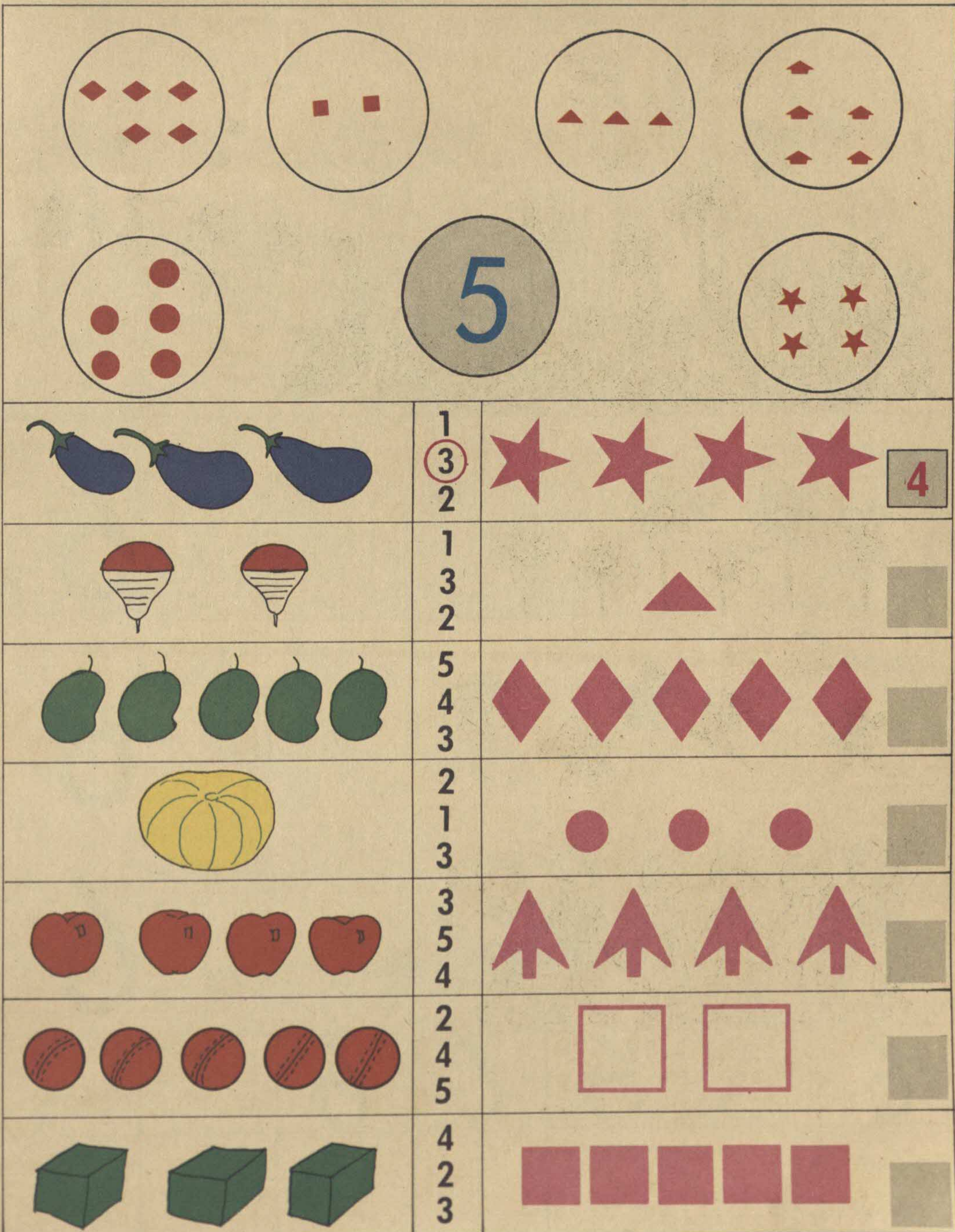




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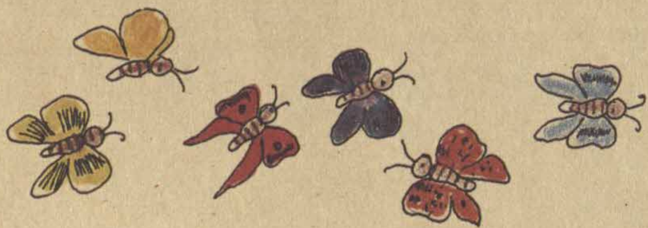

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SIX





6



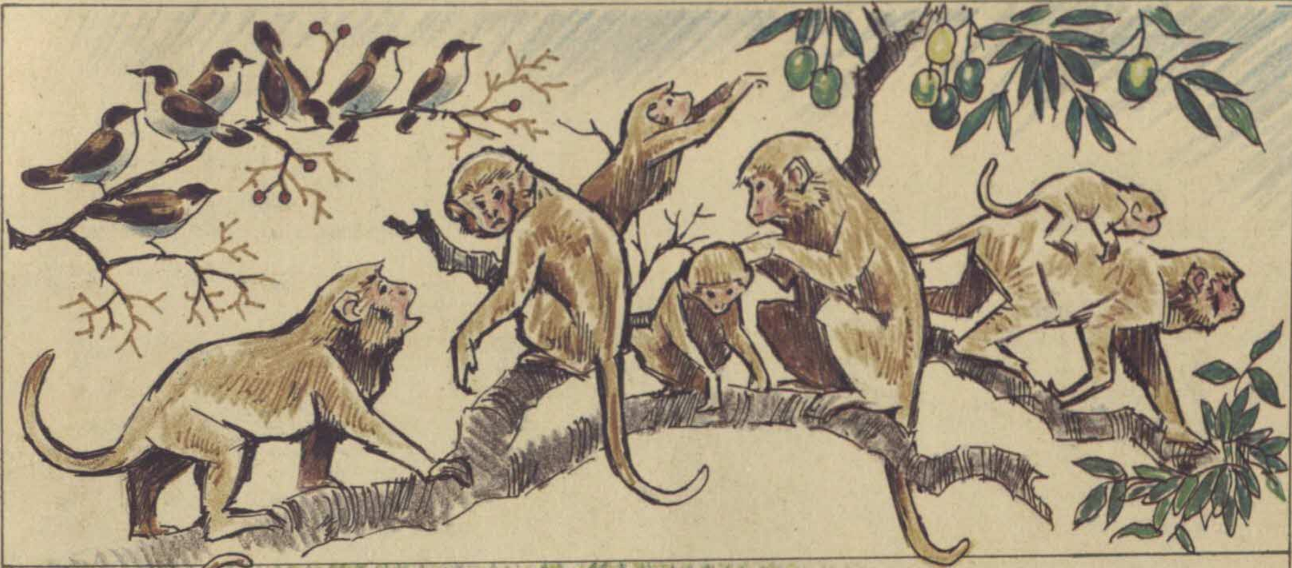
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6

6	6	6	6	6		

SEVEN





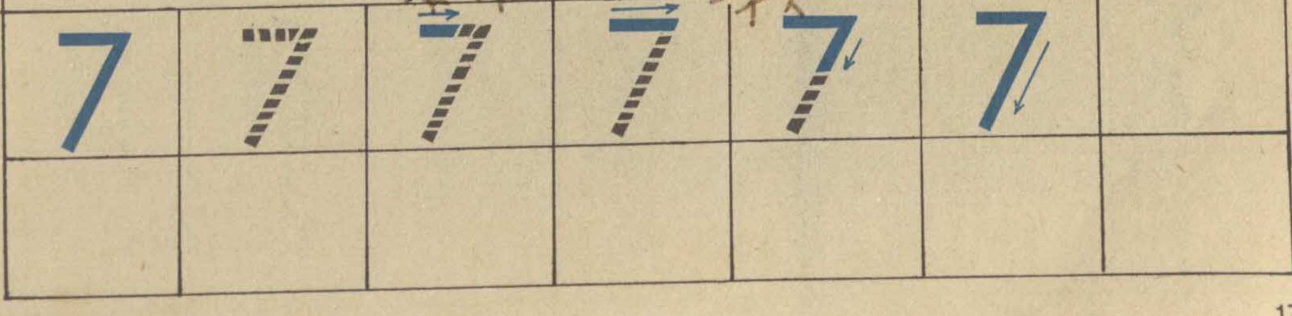
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7



EIGHT





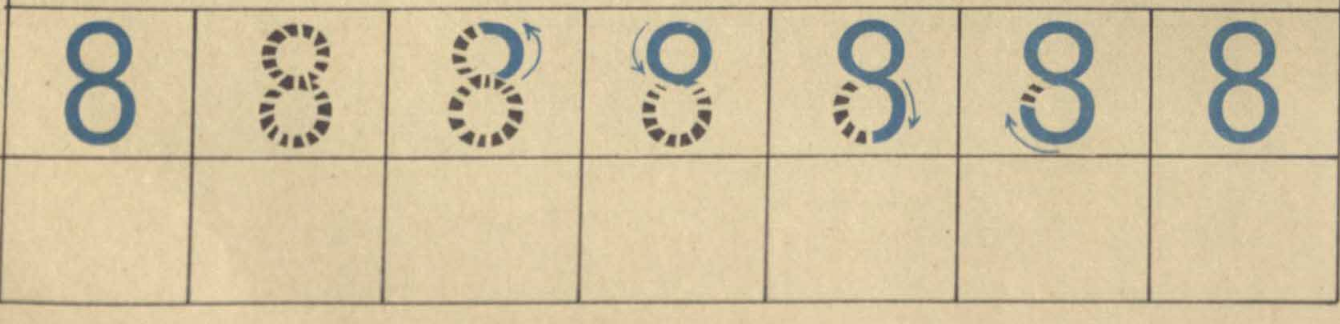
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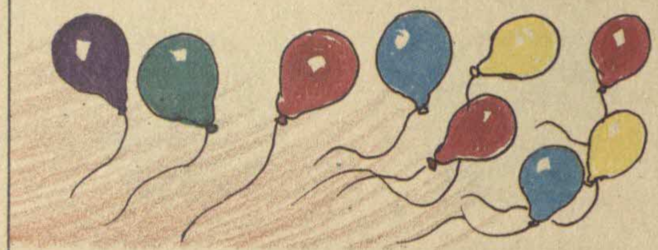


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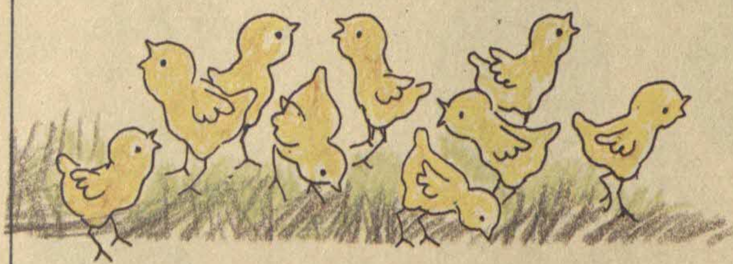


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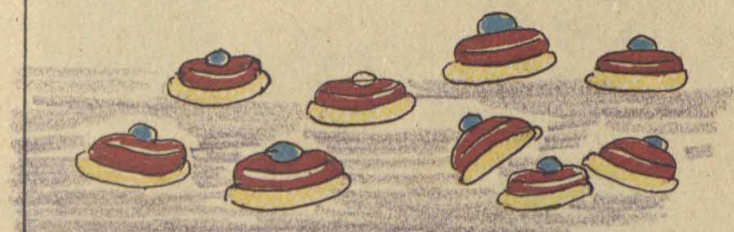




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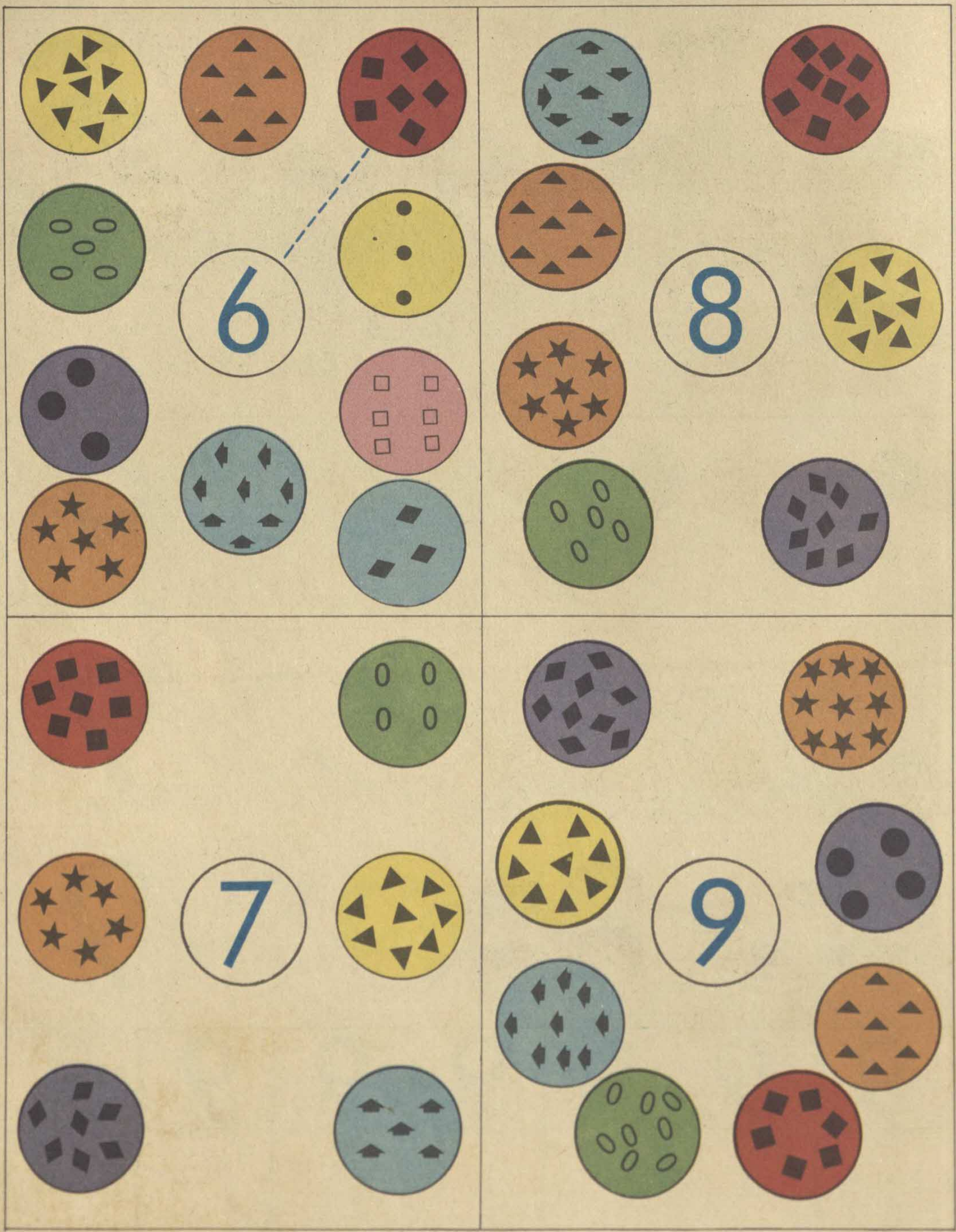


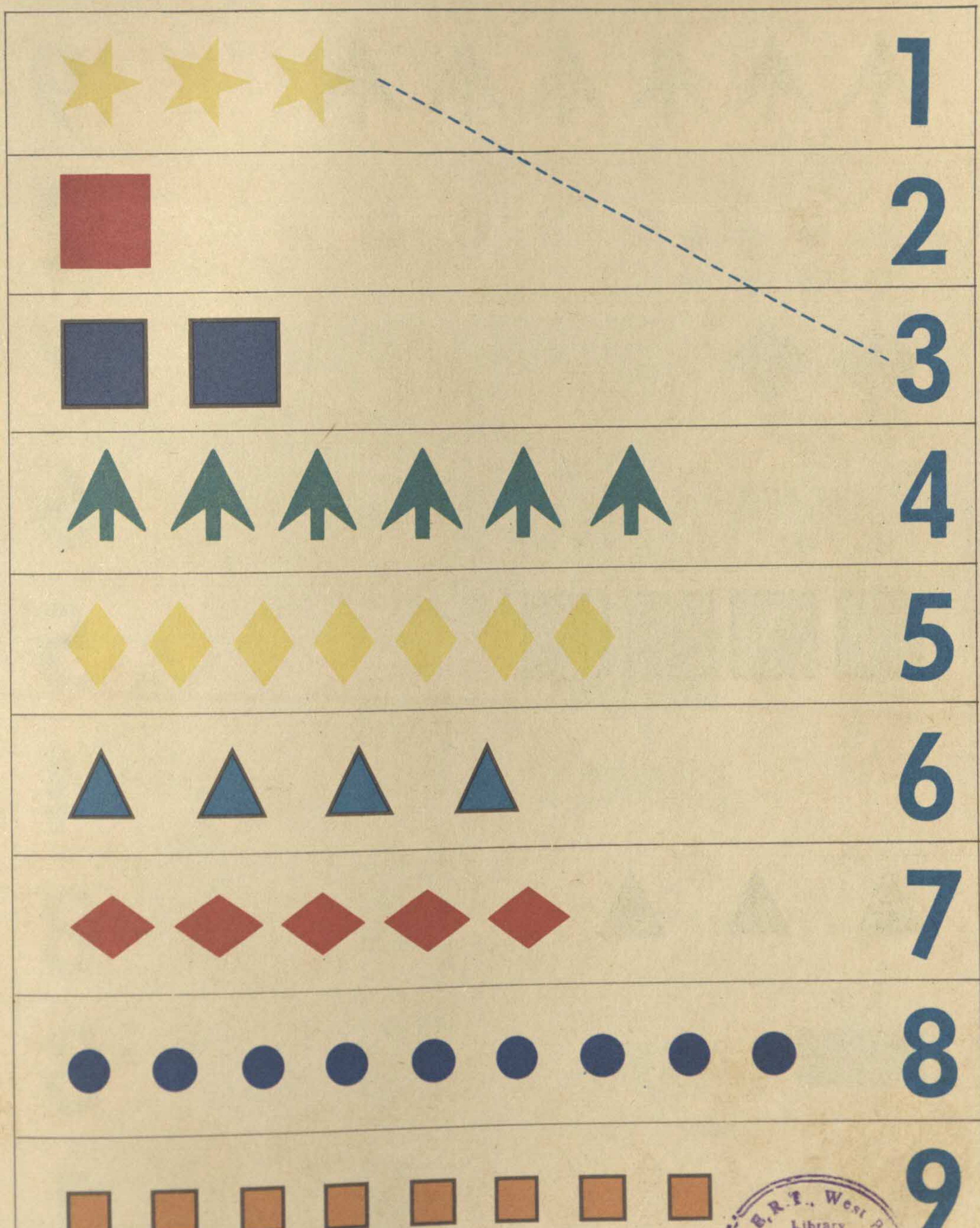
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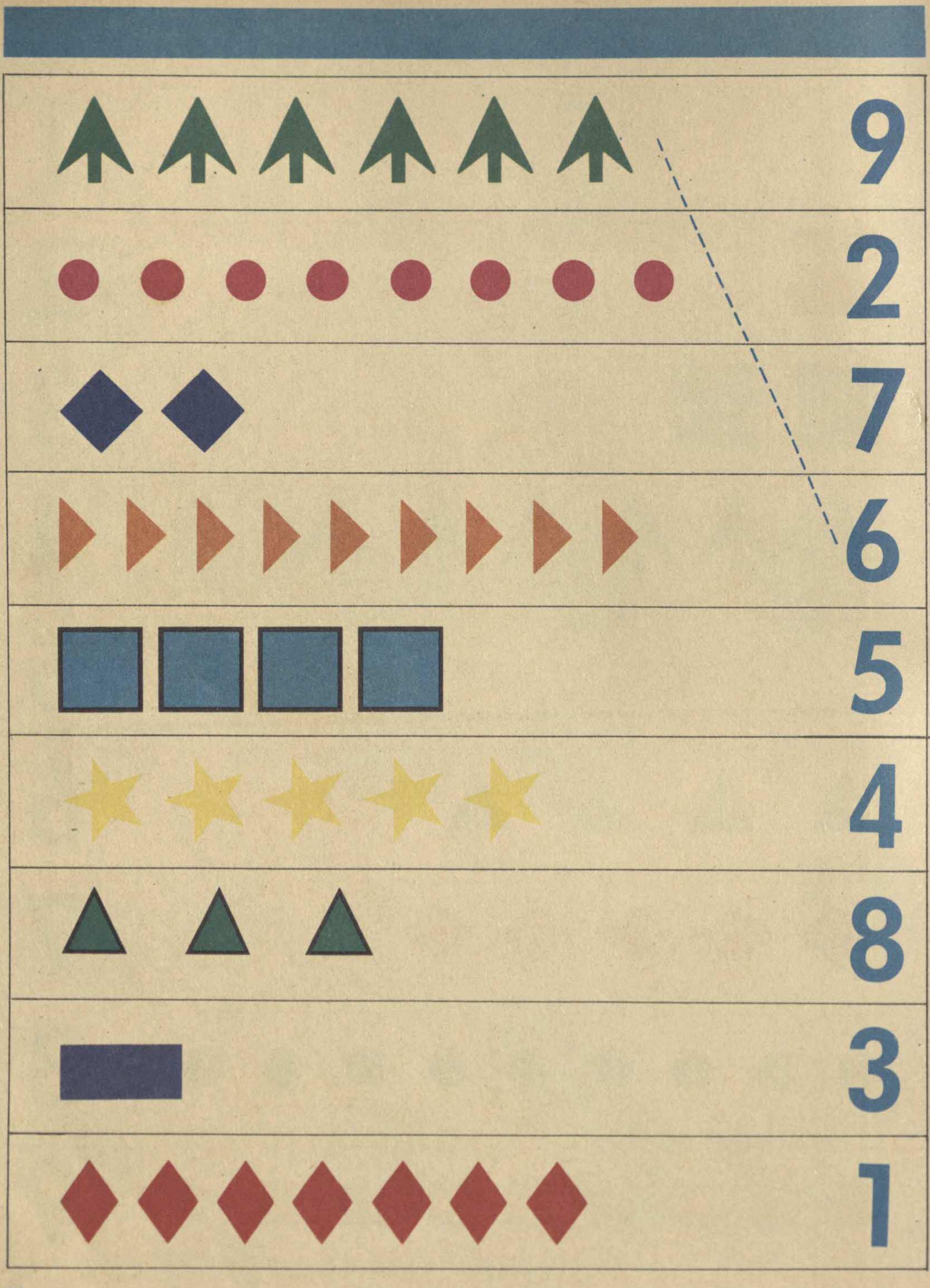


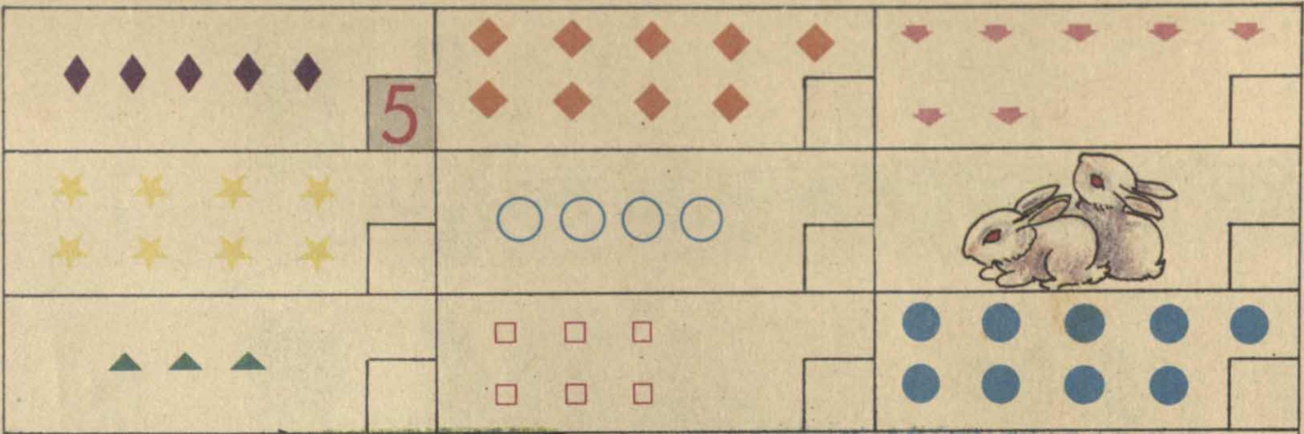
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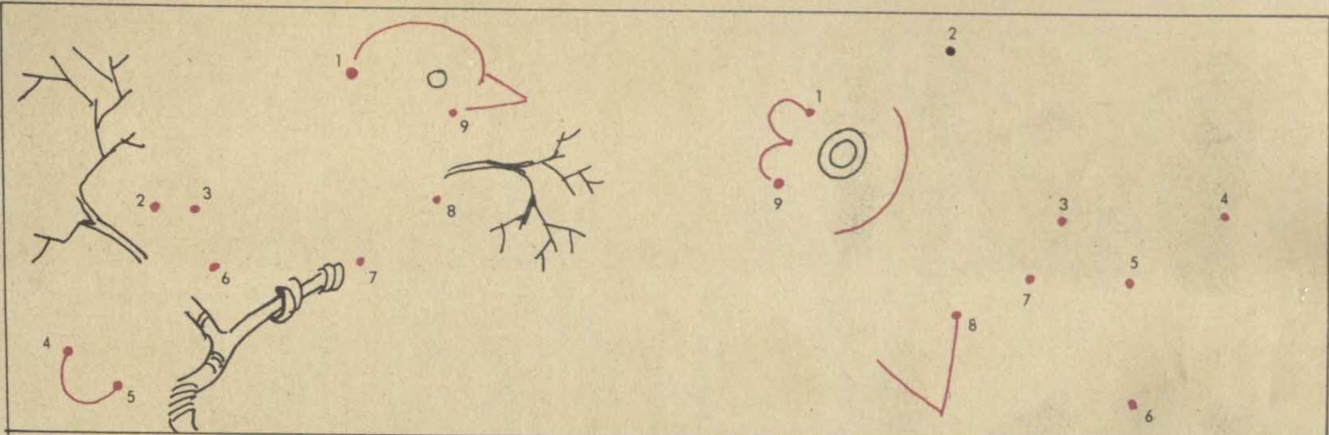
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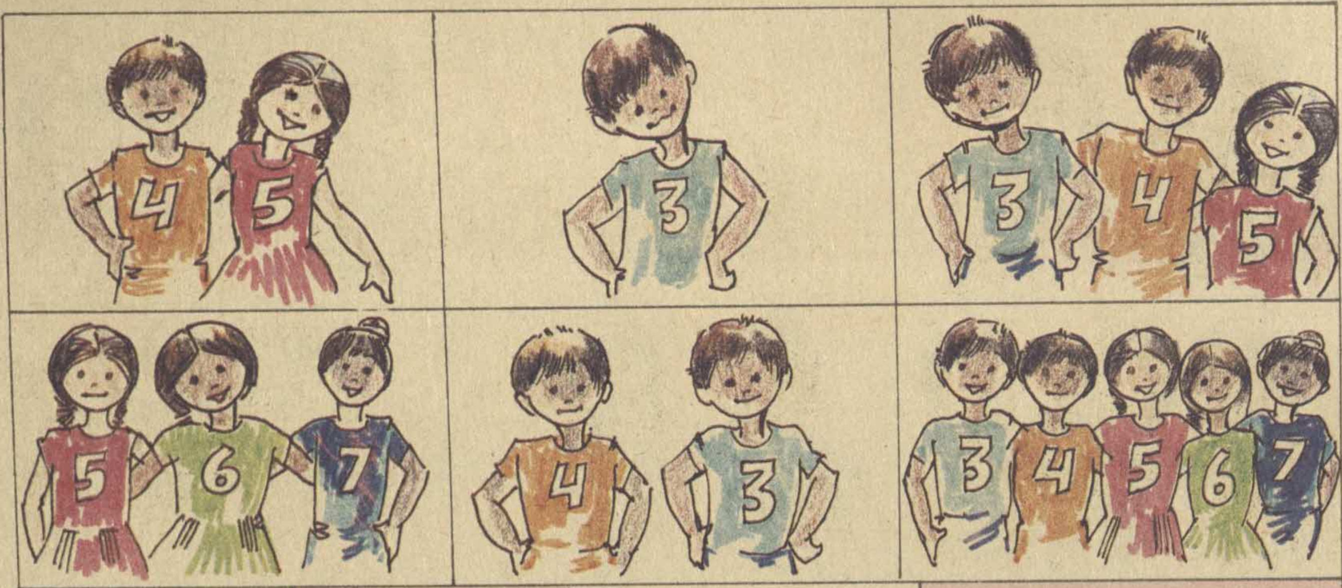
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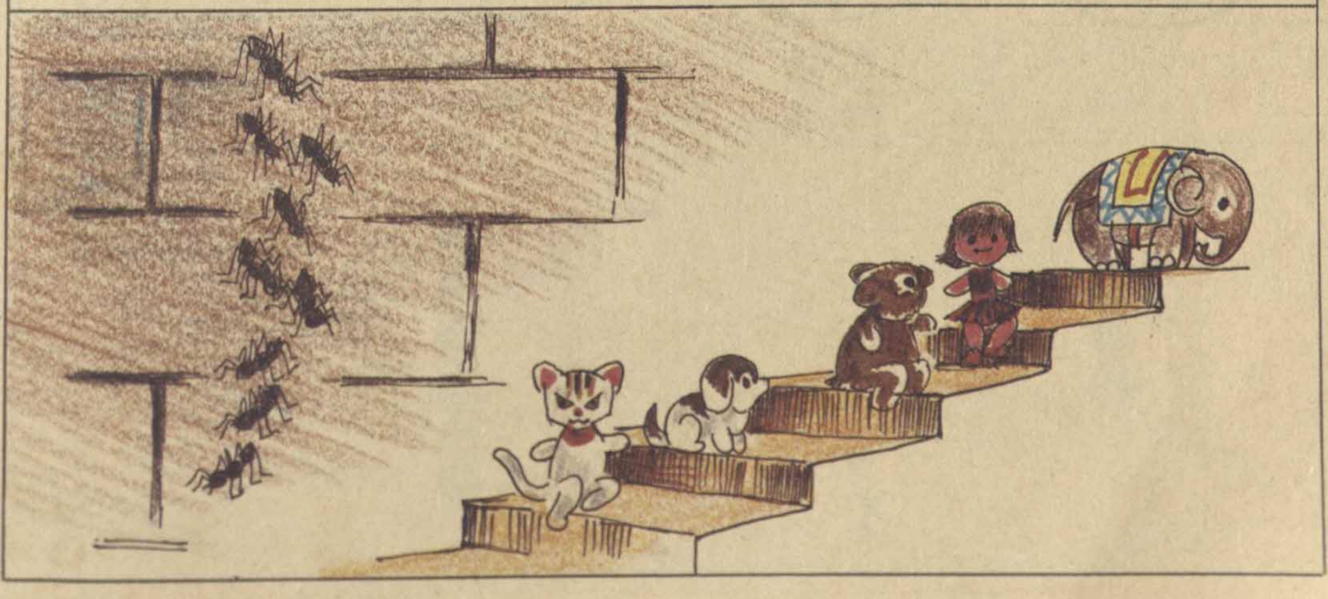
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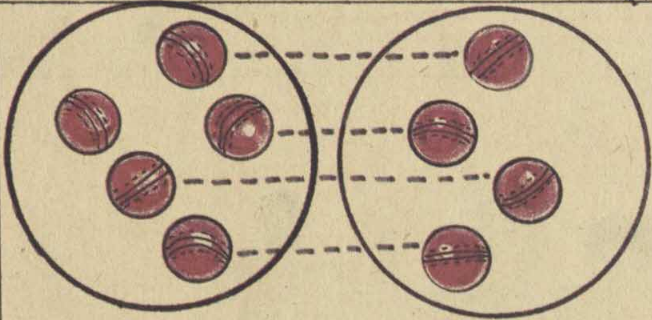


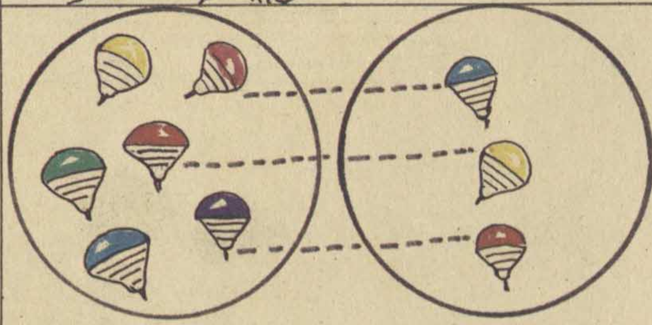
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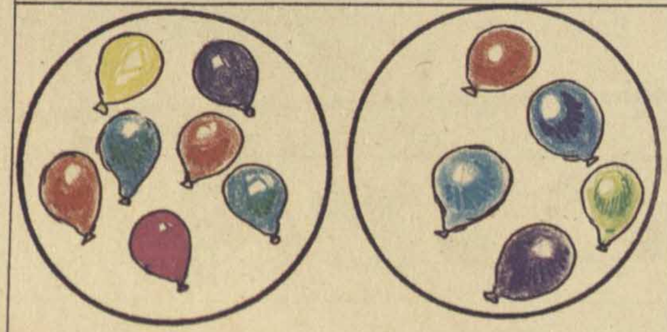




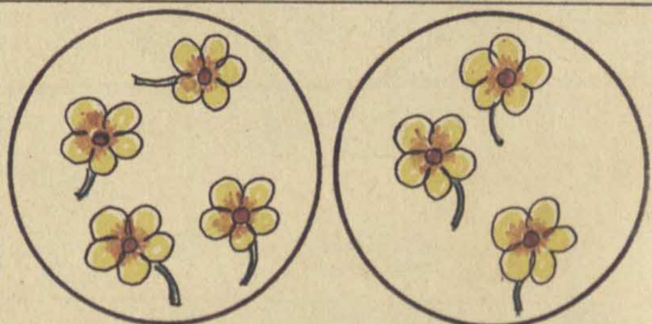
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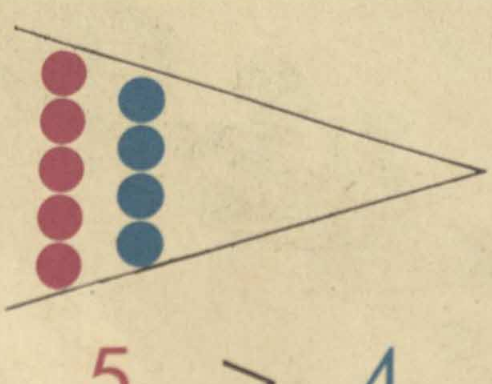
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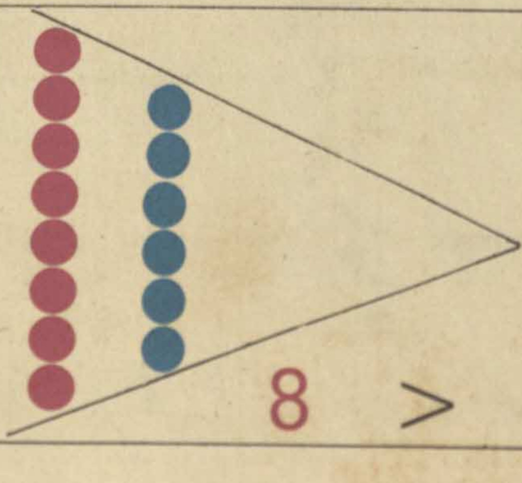
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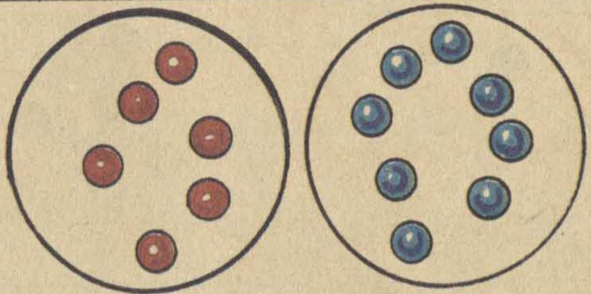


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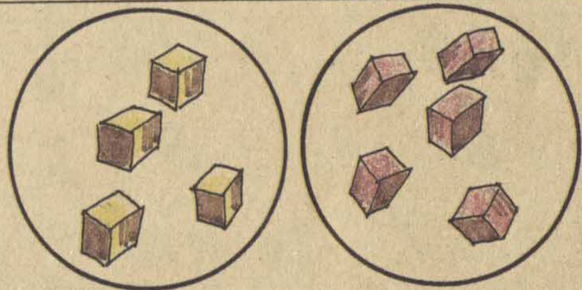


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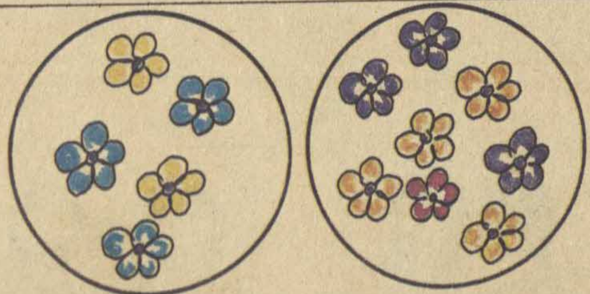




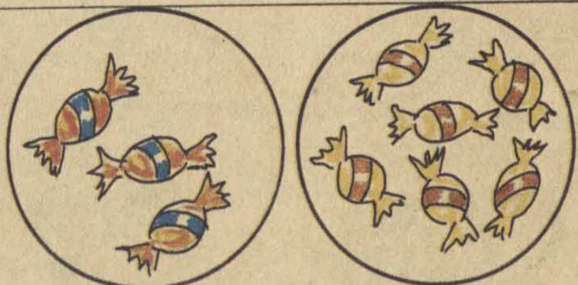
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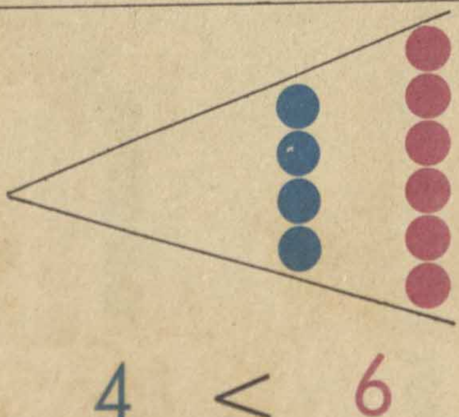
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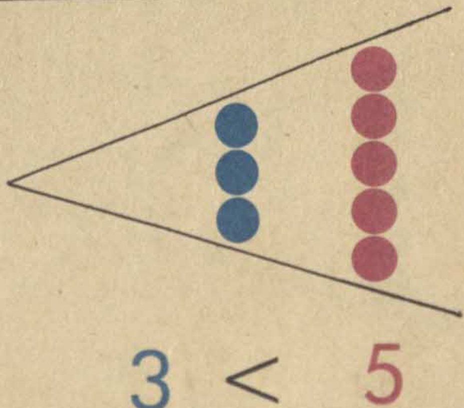
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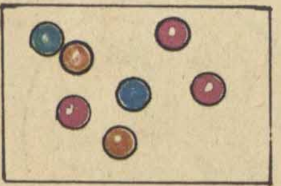
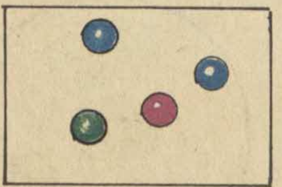
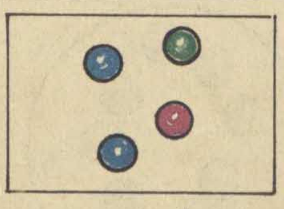
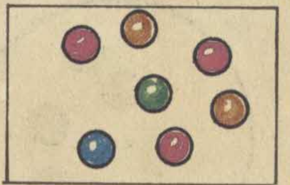


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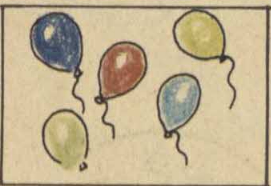
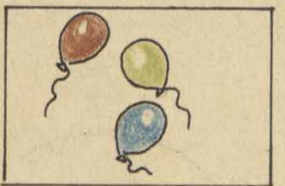
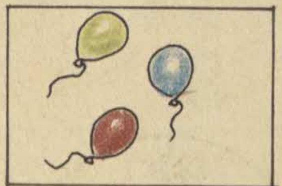
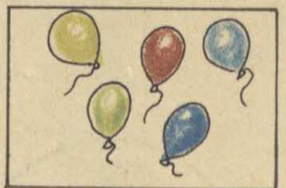


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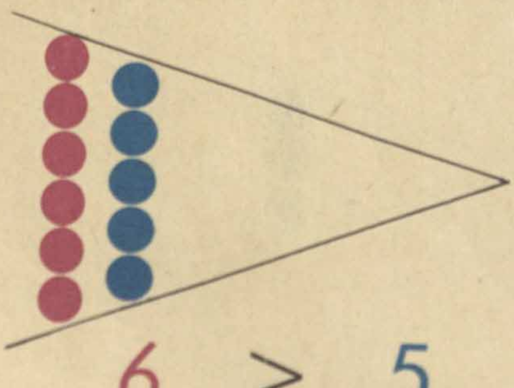
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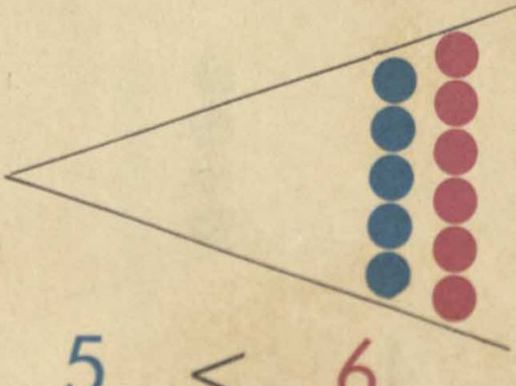
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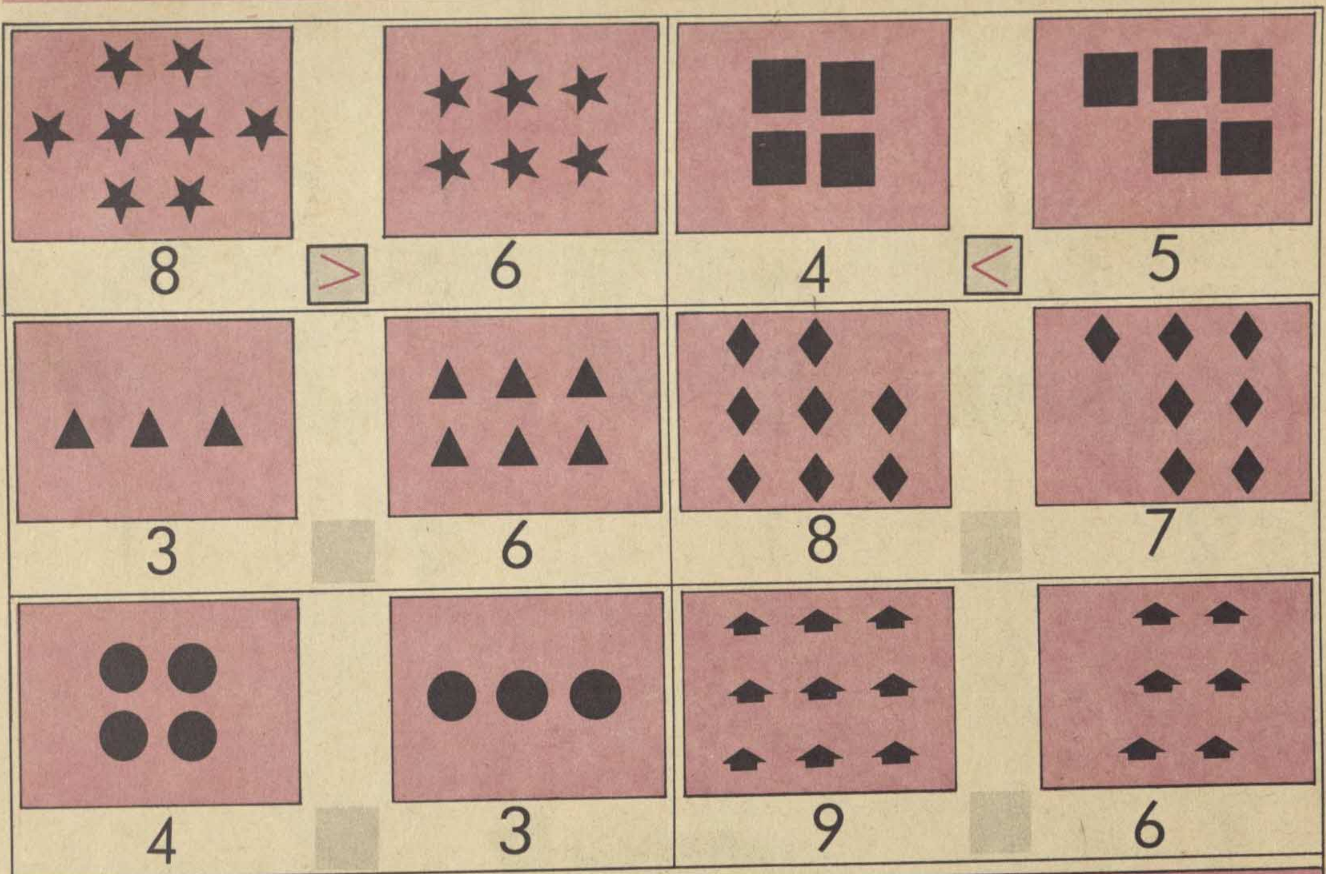
3 > 2   2 < 3



6 > 5



5 < 6



7 □ 6
5 □ 8

7 > 6
5 < 8

4 □ 1
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7 □ 8
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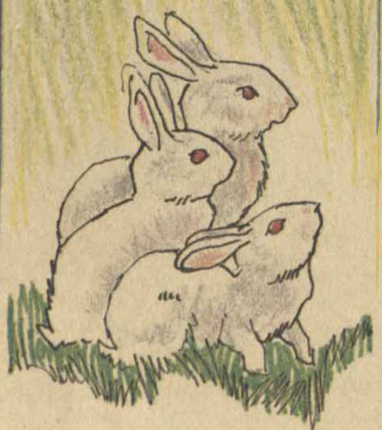
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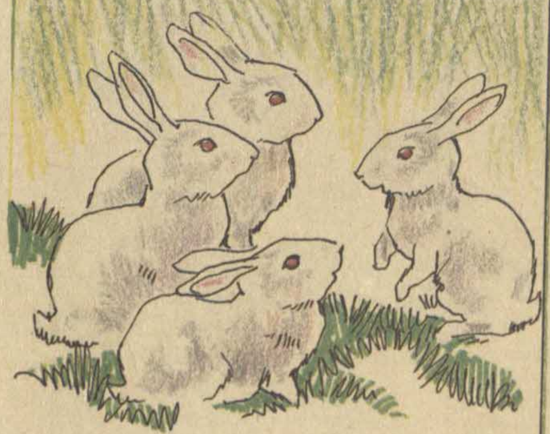
2 + 1



3



1



3 + 1



2



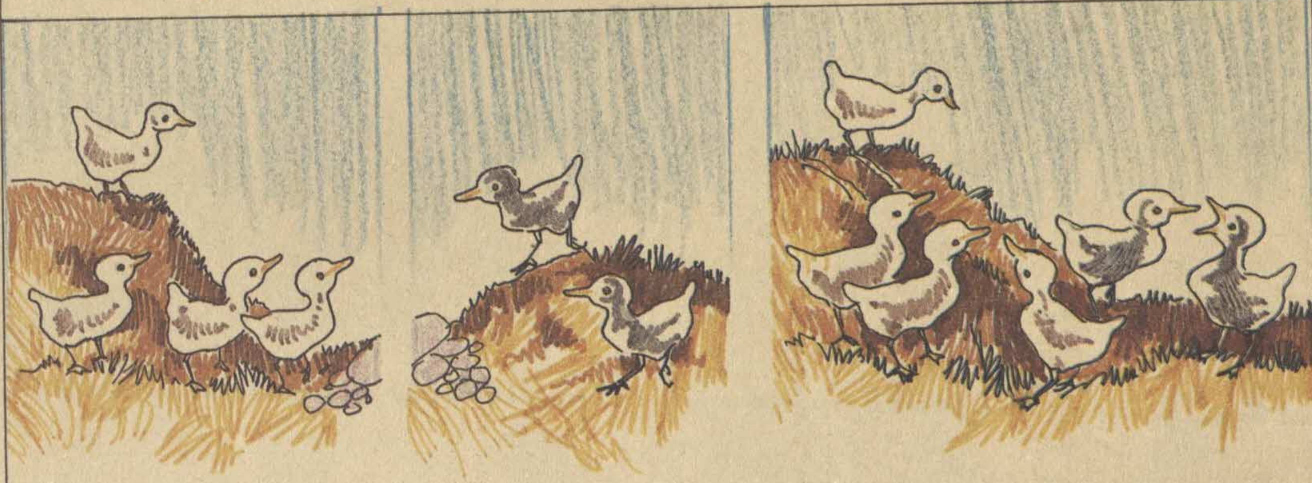
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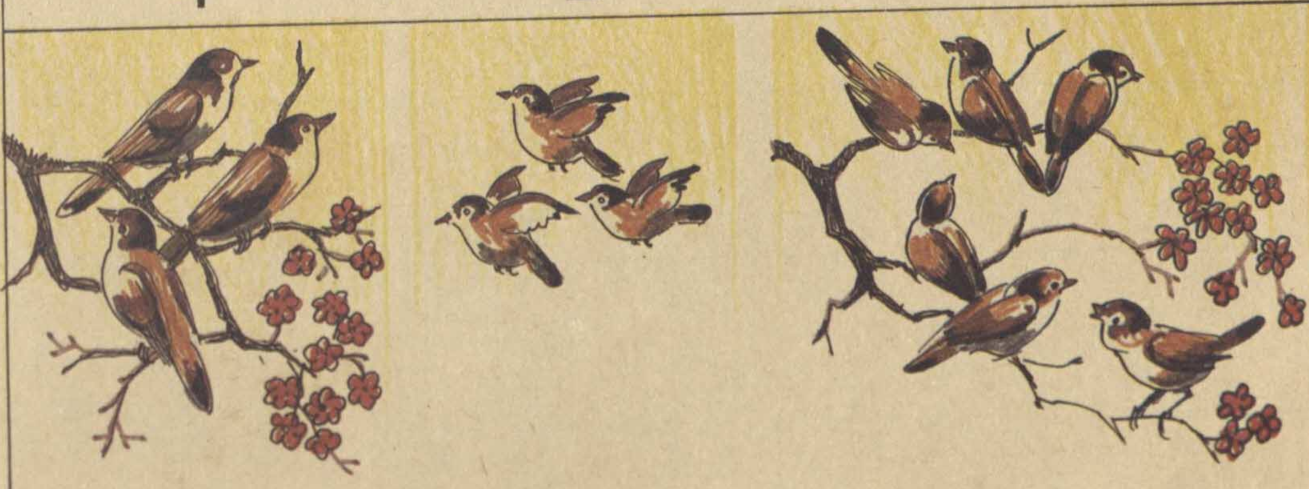
2 + 2



2 + 1 = 3



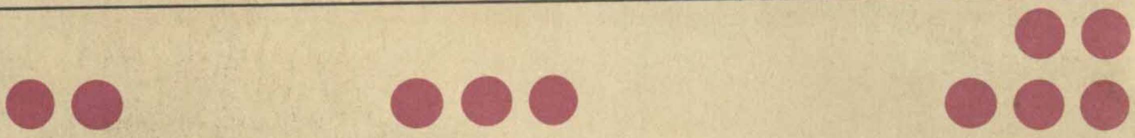
4 + 2 = 6



3 + 3 = 6



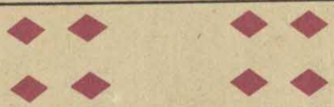
5 + 3 = 8



2 + 3 = 5



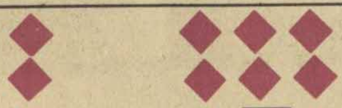
3 + 4 = 7



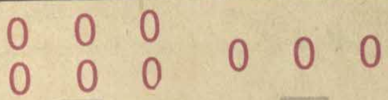
☐ + ☐ = 8



4 + 4 = 8



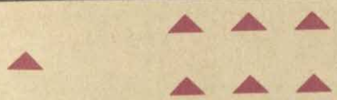
2 + 6 = 8



☐ + ☐ = ☐



☐ + ☐ = ☐



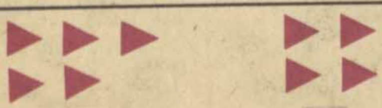
☐ + ☐ = ☐



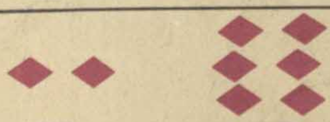
☐ + ☐ = ☐



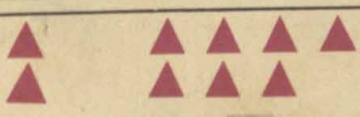
☐ + ☐ = ☐



☐ + ☐ = ☐



☐ + ☐ = ☐



☐ + ☐ = ☐



☐ + ☐ = ☐

1+1 =2

2+1 =3
1+2 =3

3+1 =4
2+2 =4
☐+☐ =4

4+1 =5
3+2 =5
☐+☐ =5
☐+☐ =5

5+1 =6
4+2 =6
☐+☐ =6
☐+☐ =6
☐+☐ =6

6+1 =7
5+2 =7
☐+☐ =7
☐+☐ =7
☐+☐ =7
☐+☐ =7

7+1 =8
6+2 =8
☐+☐ =8
☐+☐ =8
☐+☐ =8
☐+☐ =8
☐+☐ =8

8+1 =9
7+2 =9
☐+☐ =9
☐+☐ =9
☐+☐ =9
☐+☐ =9
☐+☐ =9
☐+☐ =9

2 + 1 = □ + 2	2 + 1 = [1] + 2
3 + 2 = □ + 3 5 + 1 = □ + 5 4 + 3 = □ + 4 3 + 6 = □ + 3	6 + 2 = □ + 6 8 + 2 = □ + 8 4 + 5 = □ + 4 2 + 7 = □ + 2
2 + 6 = 6 + □	2 + 6 = 6 + [2]
5 + 1 = 1 + □ 3 + 3 = 3 + □ 4 + 5 = 5 + □ 1 + 6 = 6 + □	2 + 3 = 3 + □ 1 + 4 = 4 + □ 6 + 3 = 3 + □ 7 + 2 = 2 + □
□ + 2 = 2 + 3	[3] + 2 = 2 + 3
□ + 2 = 2 + 7 □ + 3 + 3 + 5 □ + 4 = 4 + 3 □ + 2 = 2 + 2	□ + 4 = 4 + 5 □ + 6 = 6 + 3 □ + 1 = 1 + 2 □ + 5 = 5 + 1
6 + □ = 3 + 6	6 + [3] = 3 + 6
1 + □ = 7 + 1 4 + □ = 4 + 4 2 + □ = 1 + 2 5 + □ = 4 + 5	3 + □ = 3 + 3 1 + □ = 8 + 1 2 + □ = 7 + 2 6 + □ = 2 + 6

3 + 2 = □	3 + 2 = [5]
2 + 1 = □ 4 + 2 = □ 5 + 3 = □ 6 + 3 = □	1 + 3 = □ 3 + 4 = □ 4 + 5 = □ 2 + 7 = □
3 + □ = 7	3 + [4] = 7
5 + □ = 9 4 + □ = 5 4 + □ = 7 3 + □ = 4	3 + □ = 7 1 + □ = 9 3 + □ = 9 2 + □ = 8
□ + 4 = 6	[2] + 4 = 6
□ + 3 = 6 □ + 1 = 5 □ + 4 = 9 □ + 2 = 8	□ + 5 = 7 □ + 6 = 7 □ + 4 = 8 □ + 5 = 9

□ + □ = 6	[1] + [5] = 6	[2] + [4] = 6	[3] + [3] = 6
□ + □ = 5 □ + □ = 5	□ + □ = 7 □ + □ = 7 □ + □ = 7	□ + □ = 8 □ + □ = 8 □ + □ = 8 □ + □ = 8	□ + □ = 9 □ + □ = 9 □ + □ = 9 □ + □ = 9

$3 + 1 = 4$

$$\begin{array}{r} 3 \\ +\,1 \\ \hline 4 \\ \hline \end{array}$$

$6 + 3 = 9$

$$\begin{array}{r} 6 \\ +\,3 \\ \hline 9 \\ \hline \end{array}$$

$\begin{array}{r} 4 \\ +\,2 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +\,3 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +\,2 \\ \hline 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +\,3 \\ \hline 8 \\ \hline \end{array}$



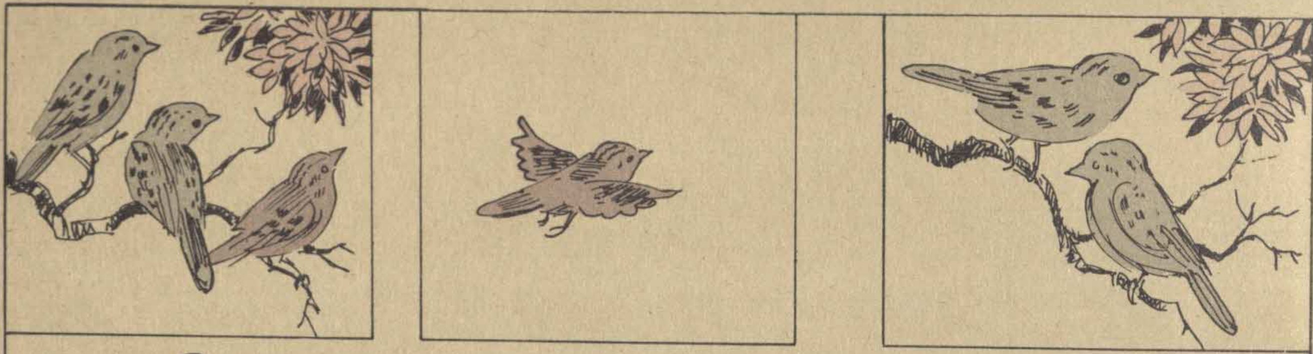
$\begin{array}{r} 3 \\ +\,2 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +\,3 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +\,4 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +\,3 \\ \hline \square \\ \hline \end{array}$
$\begin{array}{r} 7 \\ +\,1 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +\,4 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +\,4 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +\,2 \\ \hline \square \\ \hline \end{array}$
$\begin{array}{r} 3 \\ +\,3 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +\,5 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +\,4 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +\,5 \\ \hline \square \\ \hline \end{array}$

+	1	2	3	4	5
1					
2		4			
3				7	
4	5				
5			8		

+	4	1	2	5	3
2				7	
1					
3					6
5		6			
4					

+	4	6	2	3	5	8	7	1
1								
2								
3								
5								
8								
7								
6								
4								

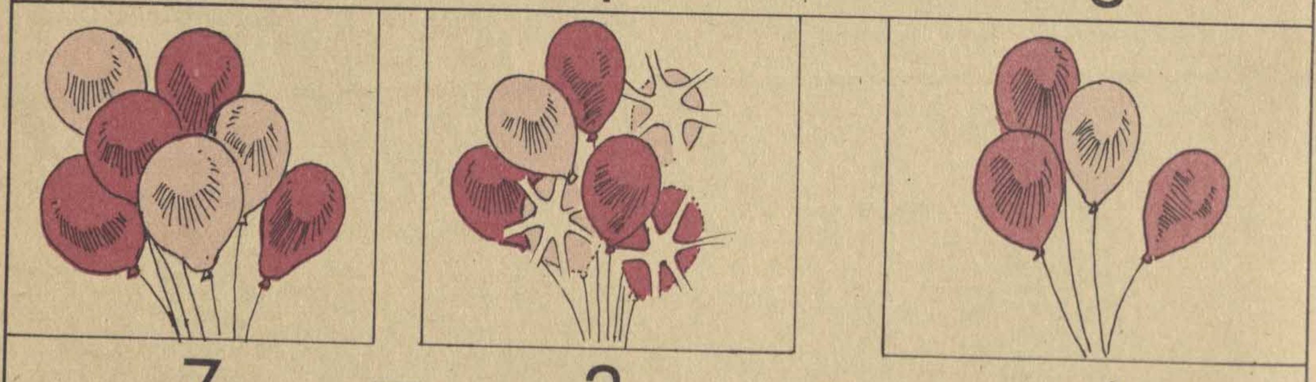
UNIT 6 Subtraction



3 − 1 = 2



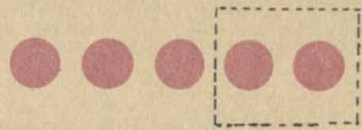
4 − 1 = 3



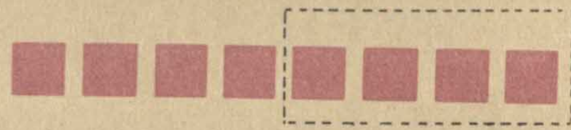
7 − 3 = 4



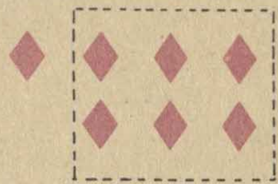
5 − 3 = 2



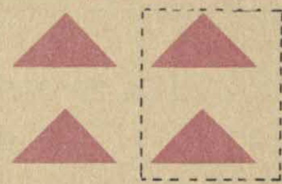
5 − 2 = 3



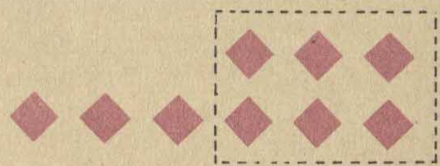
8 − 4 = 4



7 − 6 = 1



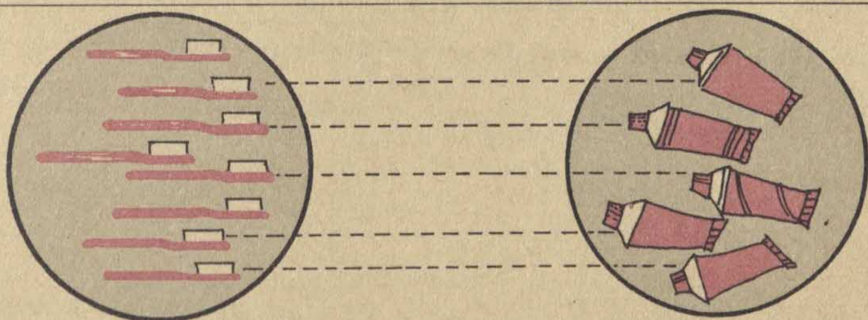
4 − 2 = 2



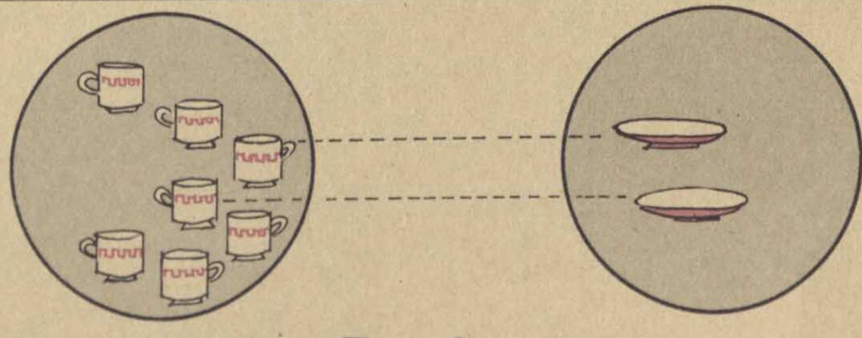
9 − 6 = 3



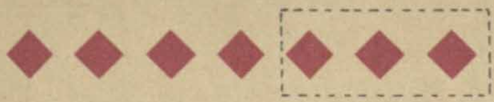
6 − 2 = 4



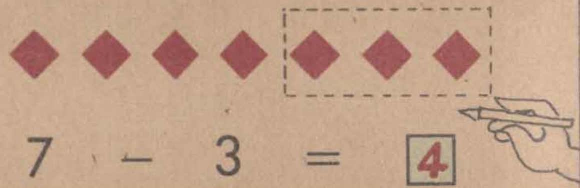
8 − 5 = 3



7 − 2 = 5



7 − 3 =



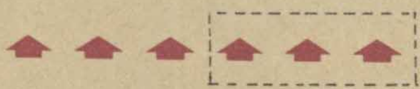
7 − 3 = 4



5 − 2 =



9 − 3 =



6 − 3 =



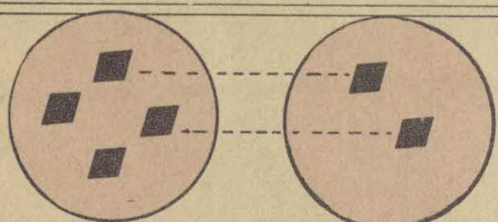
9 − 8 =



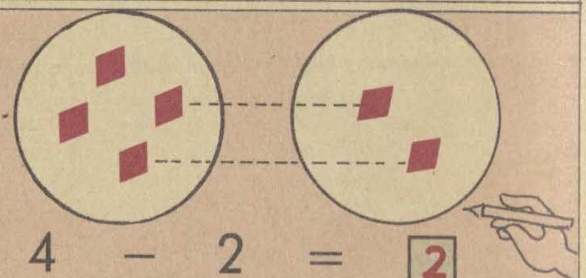
8 − 4 =



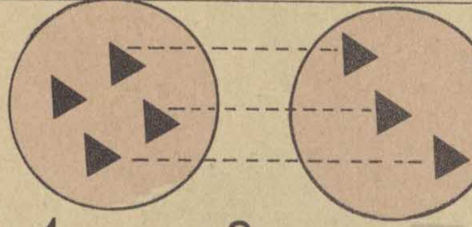
7 − 5 =



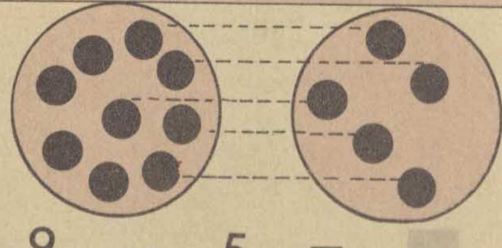
4 − 2 =



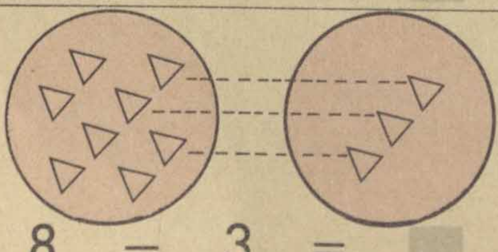
4 − 2 = 2



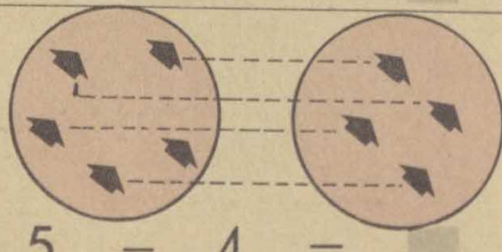
4 − 3 =



9 − 5 =



8 − 3 =



5 − 4 =

△△ 2 − 1 = 1

△△△ 3 − 1 = 2
△△△ 3 − 2 = 1

△△△△ 4 − 1 = 3
△△△△ 4 − □ = 2
△△△△ 4 − □ = 1

△△△△△ 5 − 1 = 4
△△△△△ 5 − 2 = □
△△△△△ 5 − □ = □
△△△△△ 5 − □ = □

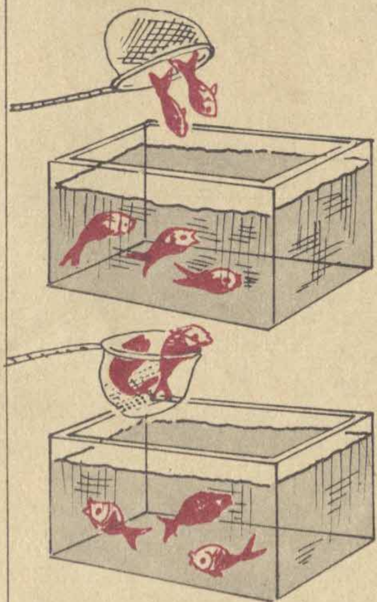
△△△△△△ 6 − 1 = 5
△△△△△△ 6 − □ = □
△△△△△△ 6 − □ = □
△△△△△△ 6 − □ = □
△△△△△△ 6 − □ = □

△△△△△△△ 7 − 1 = 6
△△△△△△△ 7 − □ = □
△△△△△△△ 7 − □ = □
△△△△△△△ 7 − □ = □
△△△△△△△ 7 − □ = □
△△△△△△△ 7 − □ = □

△△△△△△△△ 8 − 1 = 7
△△△△△△△△ 8 − □ = □
△△△△△△△△ 8 − □ = □
△△△△△△△△ 8 − □ = □
△△△△△△△△ 8 − □ = □
△△△△△△△△ 8 − □ = □
△△△△△△△△ 8 − □ = □

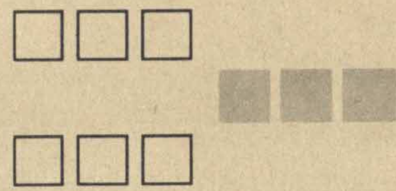
△△△△△△△△△ 9 − 1 = 8
△△△△△△△△△ 9 − □ = □
△△△△△△△△△ 9 − □ = □
△△△△△△△△△ 9 − □ = □
△△△△△△△△△ 9 − □ = □
△△△△△△△△△ 9 − □ = □
△△△△△△△△△ 9 − □ = □
△△△△△△△△△ 9 − □ = □

3 − 1 =	3 − 1 = 2 
3 − 2 =	4 − 2 =
5 − 1 =	8 − 5 =
7 − 4 =	9 − 3 =
6 − 3 =	8 − 4 =
4 − 3 =	4 − 3 = 1 
5 − 2 =	6 − 4 =
6 − 2 =	7 − 6 =
7 − 5 =	8 − 2 =
8 − 1 =	9 − 6 =
9 − 7 =	4 − 1 =

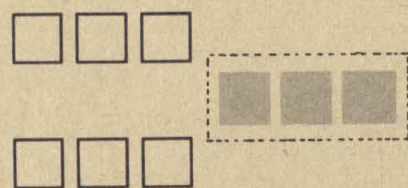


$3 + 2 = 5$

$5 - 2 = 3$



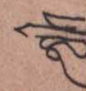
$6 + 3 = 9$



$9 - 3 = 6$

6 + 2 = ☐
8 − 2 = ☐

6 + 2 = 8
8 − 2 = 6



6 + 3 = ☐
9 − 3 = ☐

4 + 4 = ☐
8 − 4 = ☐

5 + 2 = ☐
7 − 2 = ☐

4 + 5 = ☐
9 − 5 = ☐

2 + 3 = ☐
5 − 3 = ☐

1 + 7 = ☐
8 − 7 = ☐

7 + 2 = ☐
9 − 2 = ☐

3 + 3 = ☐
6 − 3 = ☐

□ □ □ □ ■ ■

4 + 2 = 6   2 + 4 = 6

6 − 2 = 4   6 − 4 = 2

○ ○ ○ ● ● ● ●

3 + 4 = 7   4 + 3 = 7

7 − 4 = 3   7 − 3 = 4

△ △ △ △ △ ▲ ▲ ▲ ▲

5 + 4 = 9   4 + 5 = 9

9 − 4 = 5   9 − 5 = 4

☆ ☆ ☆ ★ ★ ★ ★ ★

3 + 5 = 8   5 + 3 = 8

8 − 5 = 3   8 − 3 = 5

3 + 6 = □ 6 + 3 = □ 9 − □ = 3 9 − □ = 6	3 + 6 = [9] 6 + 3 = [9] 9 − [6] = 3 9 − [3] = 6
7 + 2 = □ 2 + 7 = □ 9 − □ = 7 9 − □ = 2	5 + 1 = □ 1 + 5 = □ 6 − □ = 5 6 − □ = 1
□ − □ = 4	[9] − [5] = 4 [7] − [3] = 4 [8] − [4] = 4 [6] − [2] = 4

□ − □ = 5	□ − □ = 7	□ − □ = 3
□ − □ = 3	□ − □ = 1	□ − □ = 2
□ − □ = 4	□ − □ = 6	□ − □ = 5

$3 - 1 = 2$

$$\begin{array}{r} 3 \\ -1 \\ \hline 2 \\ \hline \end{array}$$

$7 - 4 = 3$

$$\begin{array}{r} 7 \\ -4 \\ \hline 3 \\ \hline \end{array}$$

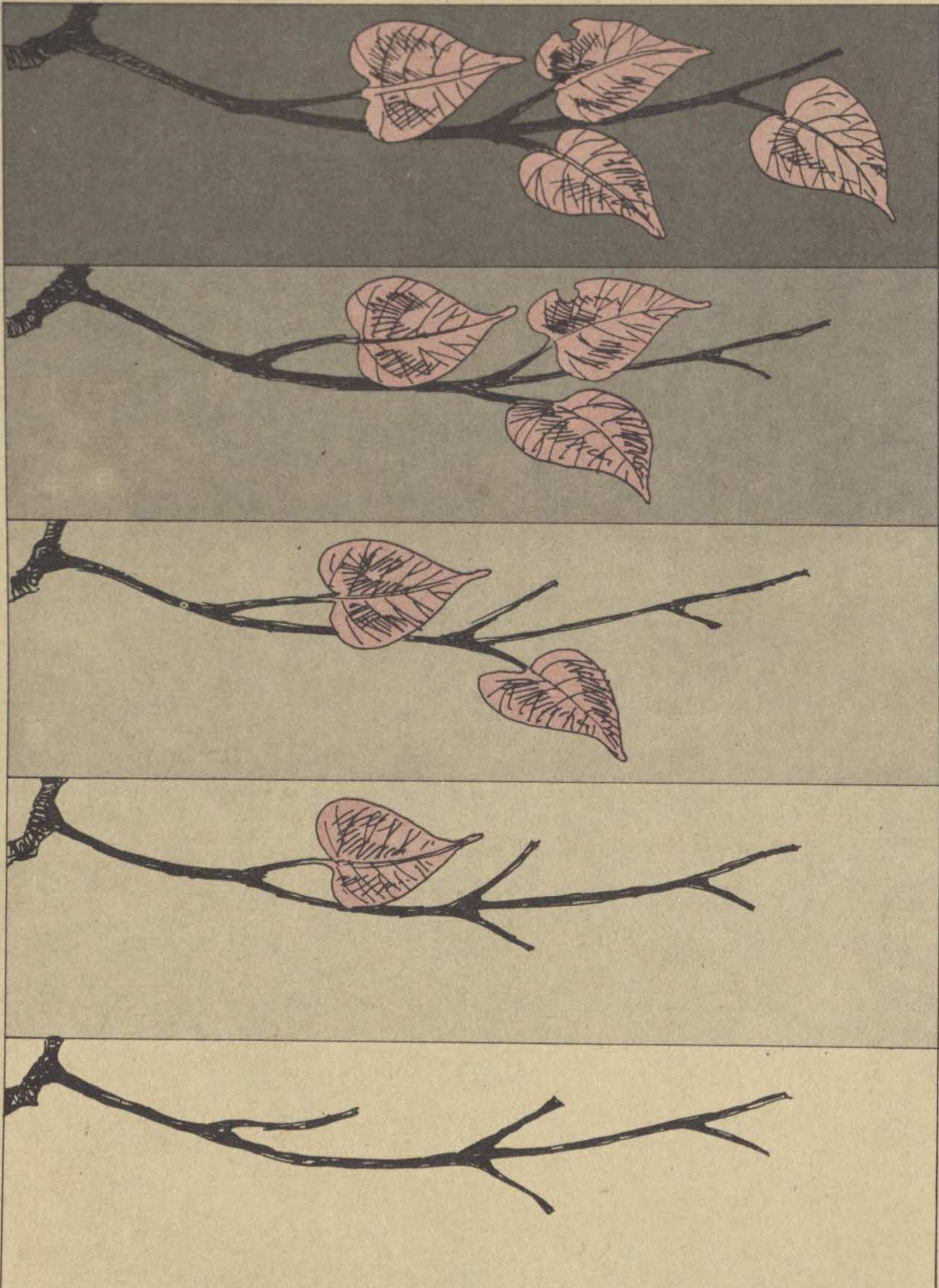
$$\begin{array}{r} 6 \\ -5 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 8 \\ -4 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 6 \\ -5 \\ \hline \boxed{1} \\ \hline \end{array} \qquad \begin{array}{r} 8 \\ -4 \\ \hline \boxed{4} \\ \hline \end{array}$$



$$\begin{array}{r} 4 \\ -3 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ -2 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 7 \\ -4 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 9 \\ -8 \\ \hline \square \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -3 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ -2 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 9 \\ -5 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 7 \\ -2 \\ \hline \square \\ \hline \end{array}$$

ZERO

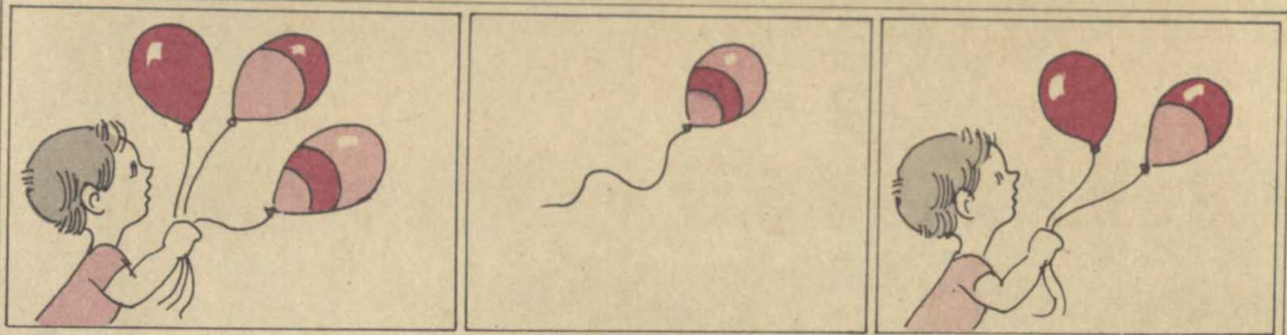


4

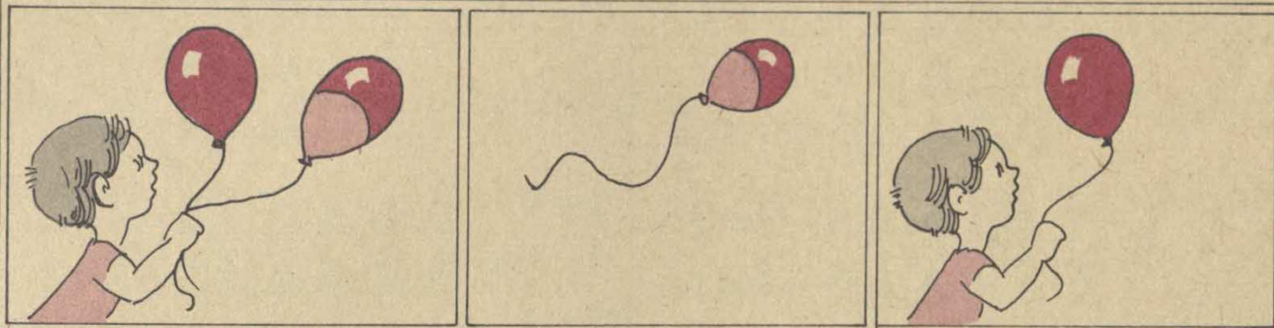
1

0

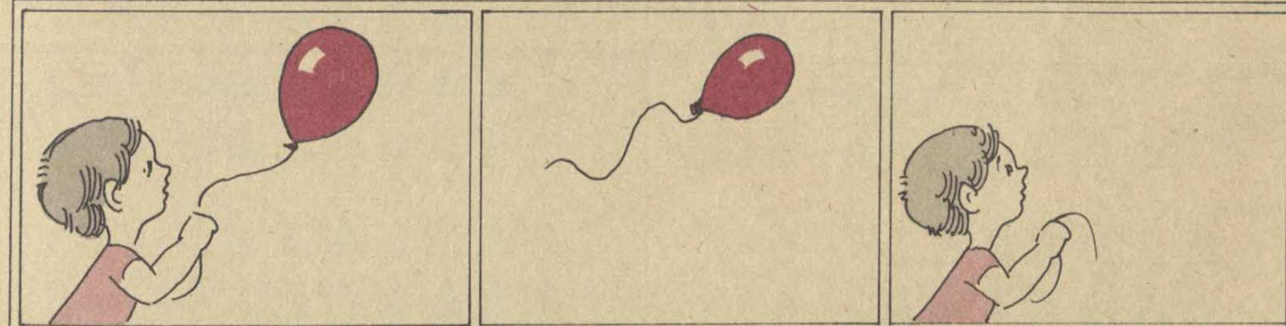
0 0 0 0 0



$$3 - 1 = 2$$



$$2 - 1 = 1$$



$$1 - 1 = 0$$



$$3 - 3 = 0$$

△△ 2−1=1

△△ 2−2=0

△△△ 3−1=2

△△△ 3−2=1

△△△ 3−3=0

△△△△ 4−2=2

△△△△ 4−3=1

△△△△ 4−4=□

△△△△△ 5−3=2

△△△△△ 5−4=1

△△△△△ 5−5=□

△△△△△△ 6−4=2

△△△△△△ 6−5=1

△△△△△△ 6−6=□

△△△△△△△ 7−5=2

△△△△△△△ 7−6=1

△△△△△△△ 7−7=□

△△△△△△△△ 8−6=2

△△△△△△△△ 8−7=1

△△△△△△△△ 8−8=□

△△△△△△△△△ 9−7=2

△△△△△△△△△ 9−8=1

△△△△△△△△△ 9−9=□

△△ 2−1=1

△△ 2−0=2

△△△ 3−2=1

△△△ 3−1=2

△△△ 3−0=3

△△△△ 4−2=2

△△△△ 4−1=3

△△△△ 4−0=□

△△△△△ 5−2=3

△△△△△ 5−1=4

△△△△△ 5−0=□

△△△△△△ 6−2=4

△△△△△△ 6−1=5

△△△△△△ 6−0=□

△△△△△△△ 7−2=5

△△△△△△△ 7−1=6

△△△△△△△ 7−0=□

△△△△△△△△ 8−2=6

△△△△△△△△ 8−1=7

△△△△△△△△ 8−0=□

△△△△△△△△△ 9−2=7

△△△△△△△△△ 9−1=8

△△△△△△△△△ 9−0=□

1+1=2
2+0=2

1+2=3
2+1=3
3+0=3

2+2=4
3+1=4
4+0=□

3+2=5
4+1=5
5+0=□

4+2=6
5+1=6
6+0=□

5+2=7
6+1=7
7+0=□

6+2=8
7+1=8
8+0=□

7+2=9
8+1=9
9+0=□

1+1=2
0+2=2

2+1=3
1+2=3
0+3=3

2+2=4
1+3=4
0+4=□

2+3=5
1+4=5
0+5=□

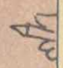
2+4=6
1+5=6
0+6=□

2+5=7
1+6=7
0+7=□

2+6=8
1+7=8
0+8=□

2+7=9
1+8=9
0+9=□

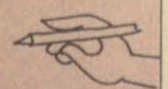
2	0	4	6	2	0	4	6
+0	+3	−0	−6	+0	+3	−0	−6
□	□	□	□	2	3	4	0



3	0	6	8
+0	+7	−0	−8
□	□	□	□
6	0	7	5
+0	+9	−0	−5
□	□	□	□
4	0	2	7
+0	+6	−0	−7
□	□	□	□

5 □ 4 = 9   5 + 4 = 9

8 □ 3 = 5   8 − 3 = 5



4 □ 4 = 8	8 □ 5 = 3	7 □ 2 = 5
6 □ 3 = 9	5 □ 1 = 4	3 □ 3 = 6
9 □ 2 = 7	8 □ 4 = 4	8 □ 1 = 9
0 □ 6 = 6	4 □ 0 = 4	5 □ 0 = 5
2 □ 7 = 9	9 □ 9 = 0	4 □ 2 = 2

−	0	1	2	3	4
0					
1				2	
2					
3					
4					0

−	3	5	9	6	4	2	1	0	7
2									
3		2		3					
1									
4									
6									
5									
8									
7			2						0
9									

+	0	1	2	3	4	5
0						
1		2				
2						
3			5		7	
4		5	6	7		9

+	4	1	5	2	0	3
2				4		
0					0	
4						
1			6			
3						6

UNIT 7 Numbers from TEN to TWENTY



8 + 1 = 9



9 + 1 = 10



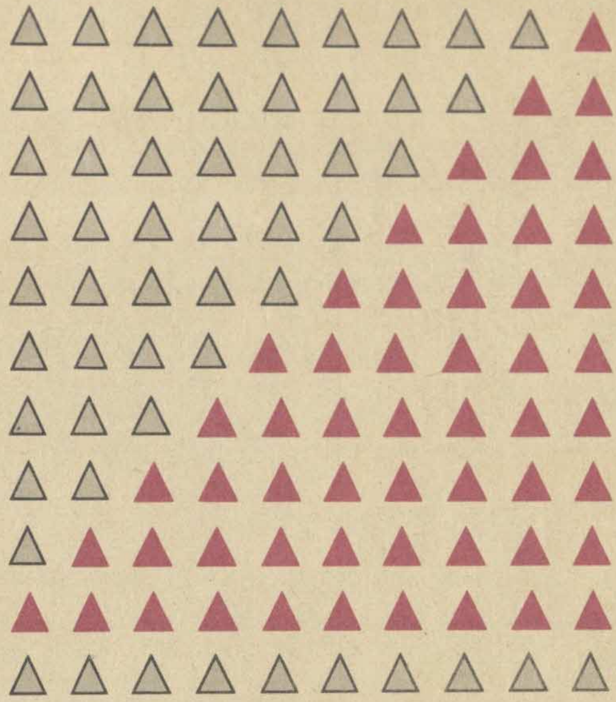
9 + 1 = 10



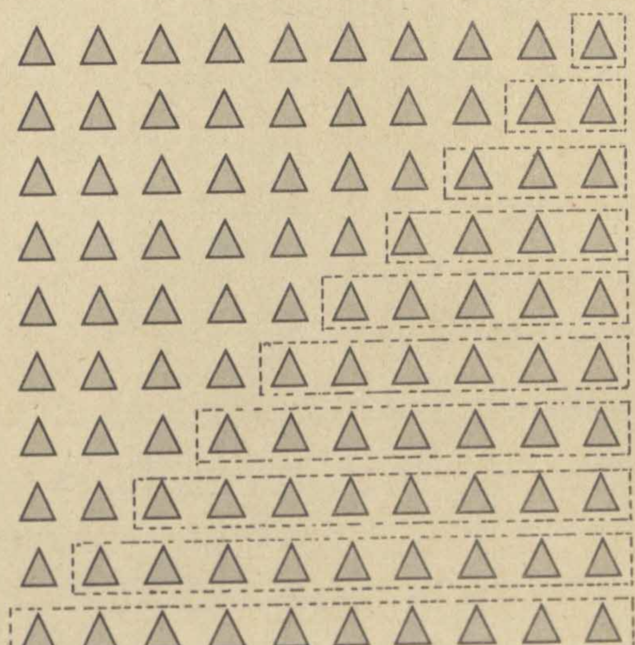
9 + 1 = 10

10	10	10	10		

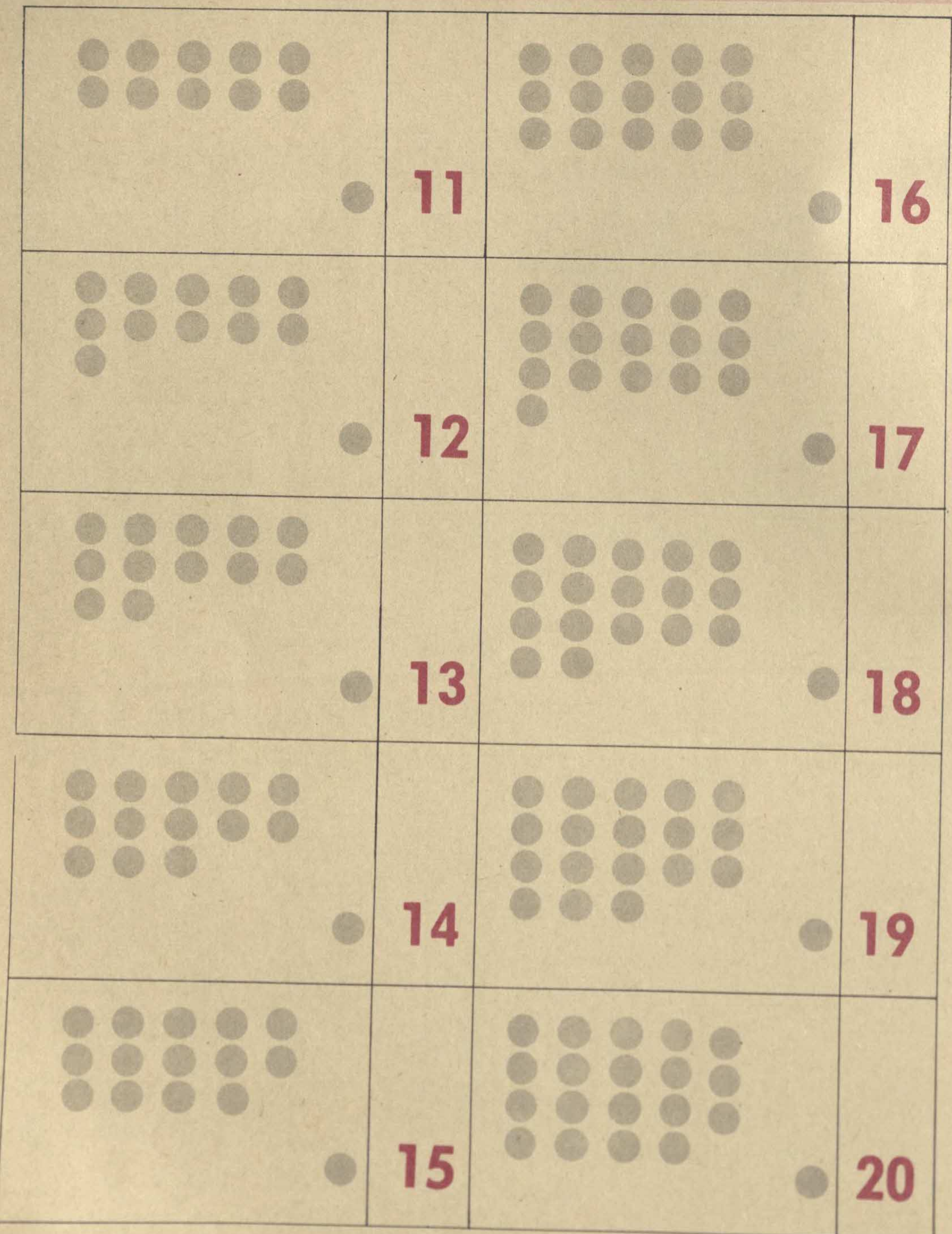
$\begin{array}{r} 4 \\ +6 \\ \hline ☐ \end{array}$	$\begin{array}{r} 4 \\ +6 \\ \hline \boxed{10} \end{array}$
$\begin{array}{r} 5 \\ +5 \\ \hline ☐ \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline ☐ \end{array}$
$\begin{array}{r} 7 \\ +3 \\ \hline ☐ \end{array}$	$\begin{array}{r} 2 \\ +8 \\ \hline ☐ \end{array}$
$\begin{array}{r} 3 \\ +7 \\ \hline ☐ \end{array}$	$\begin{array}{r} 1 \\ +9 \\ \hline ☐ \end{array}$
$\begin{array}{r} 8 \\ +2 \\ \hline ☐ \end{array}$	$\begin{array}{r} 9 \\ +1 \\ \hline ☐ \end{array}$



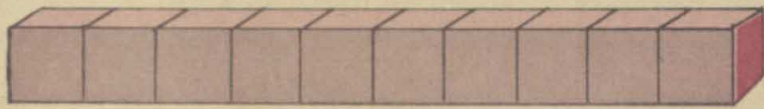
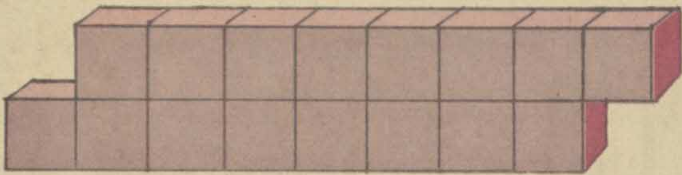
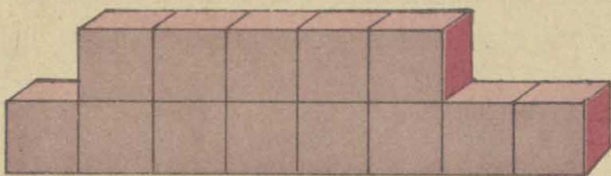
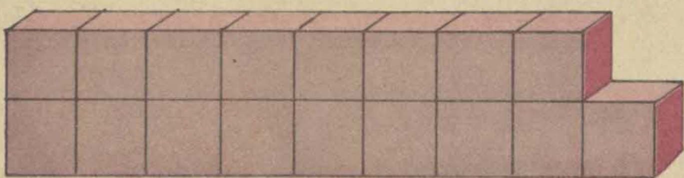
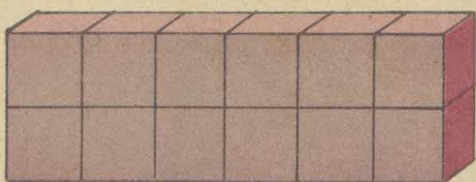
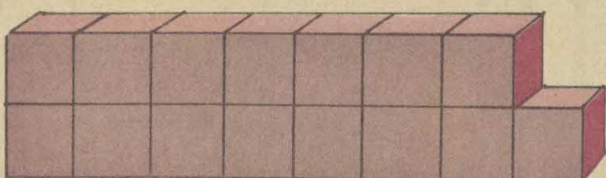
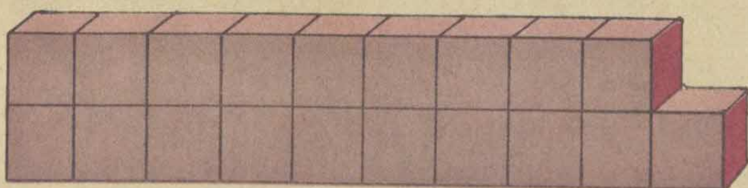
9 + 1 = 10
8 + 2 = 10
☐ + ☐ = 10
☐ + ☐ = 10
☐ + ☐ = 10
☐ + ☐ = 10
☐ + ☐ = 10
☐ + ☐ = 10
☐ + ☐ = 10
☐ + $\boxed{10}$ = 10
$\boxed{10}$ + $\boxed{0}$ = 10



10 − 1 = 9
10 − 2 = 8
10 − ☐ = ☐
10 − ☐ = ☐
10 − ☐ = ☐
10 − ☐ = ☐
10 − ☐ = ☐
10 − ☐ = ☐
10 − ☐ = ☐
10 − 10 = ☐
10 − 0 = ☐


11
12
13
14
15
16
17
18
19
20

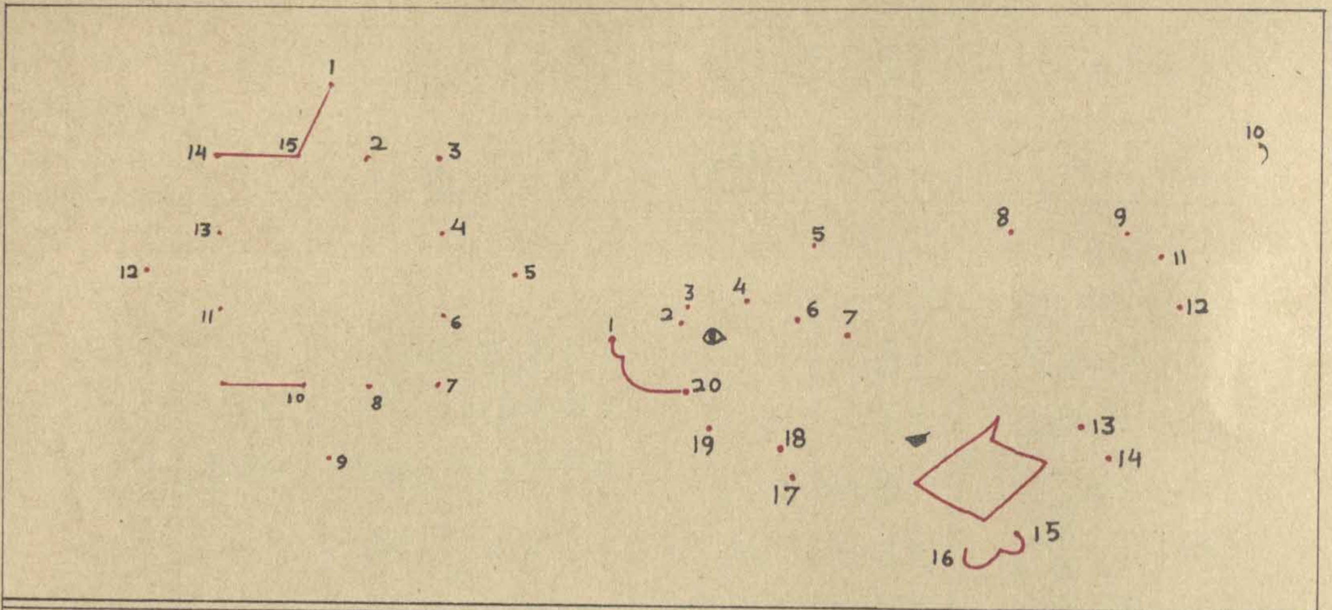
11	11	11	11			
12	12	12	12			
13	13	13	13			
14	14	14	14			
15	15	15	15			
16	16	16	16			
17	17	17	17			
18	18	18	18			
19	19	19	19			
20	20	20	20			

	9 10 12
	15 14 16
	13 9 15
	16 14 17
	10 12 14
	14 13 15
	19 18 12

10+1=□	20−1=□	10 11 □ □ □ 15
10+1=11	20−1=19	10 11 12 13 14 15 
11+1=□ 12+1=□ 13+1=□ 14+1=□ 15+1=□ 16+1=□ 17+1=□ 18+1=□ 19+1=□	19−1=□ 18−1=□ 17−1=□ 16−1=□ 15−1=□ 14−1=□ 13−1=□ 12−1=□ 11−1=□	12 13 □ □ □ 17 15 16 □ □ □ 20 10 11 □ □ □ □ 16 13 □ □ 16 15 14 □ □ □ 10 15 14 13 12 11 10  17 16 □ □ □ 12 18 □ □ □ □ □ □ □ 10 16 15 □ □ □ □ 10 20 □ □ □ □ 15

1	2	3		5		7			
		13					18		20

20	19			16		14		12	
	9		7				3		1



9 ___ 11	10 ___	___ 15	___ 11 ___
9 10 11	10 11	14 15	10 11 12
10 11 12	11 12	10 11	11 12 13
14 ___ 16	17 ___	___ 16	___ 15 ___
17 ___ 19	14 ___	___ 13	___ 18 ___
11 ___ 13	12 ___	___ 17	___ 14 ___
15 ___ 17	16 ___	___ 20	___ 16 ___
18 ___ 20	18 ___	___ 14	___ 19 ___
12 ___ 14	13 ___	___ 19	___ 13 ___
16 ___ 18	15 ___	___ 12	___ 17 ___
13 ___ 15	19 ___	___ 18	___ 10 ___



12 □ 11
14 □ 17

12 [$>$] 11
14 [$<$] 17



7 □ 13
11 □ 10
20 □ 15
15 □ 17

14 □ 9
19 □ 20
13 □ 18
18 □ 19

12 □ 19
18 □ 17
16 □ 12
11 □ 10

9 + 2 = □
9 + 3 = □

9 + 2 = [11]
9 + 3 = [12]



9 + 2 = [11]
8 + 3 = [11]
7 + 4 = □
6 + 5 = □
5 + 6 = □
4 + 7 = □
3 + 8 = □
2 + 9 = □

9 + 3 = [12]
8 + 4 = [12]
7 + 5 = □
6 + 6 = □
5 + 7 = □
4 + 8 = □
3 + 9 = □

9 + 4 = [13]
8 + 5 = [13]
7 + 6 = □
6 + 7 = □
5 + 8 = □
4 + 9 = □

9 + 5 = [14]
8 + 6 = [14]
7 + 7 = □
6 + 8 = □
5 + 9 = □

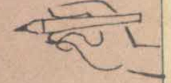
9 + 6 = [15]
8 + 7 = □
7 + 8 = □
6 + 9 = □

9 + 7 = [16]
8 + 8 = □
7 + 9 = □

9 + 8 = [17]
8 + 9 = □

9 + 9 = [18]

$$\begin{array}{r} 9 \\ +\,2 \\ \hline \square \end{array} \qquad \begin{array}{r} 9 \\ +\,2 \\ \hline \boxed{11} \end{array}$$



$$\begin{array}{r} 9 \\ +3 \\ \hline \square \end{array} \quad \begin{array}{r} 7 \\ +4 \\ \hline \square \end{array} \quad \begin{array}{r} 5 \\ +6 \\ \hline \square \end{array} \quad \begin{array}{r} 6 \\ +7 \\ \hline \square \end{array} \quad \begin{array}{r} 8 \\ +5 \\ \hline \square \end{array} \quad \begin{array}{r} 6 \\ +6 \\ \hline \square \end{array}$$

$$\begin{array}{r} 4 \\ +8 \\ \hline \square \end{array} \quad \begin{array}{r} 5 \\ +7 \\ \hline \square \end{array} \quad \begin{array}{r} 8 \\ +8 \\ \hline \square \end{array} \quad \begin{array}{r} 9 \\ +7 \\ \hline \square \end{array} \quad \begin{array}{r} 5 \\ +9 \\ \hline \square \end{array} \quad \begin{array}{r} 3 \\ +8 \\ \hline \square \end{array}$$

+	5	2	7	0	4	8	6	9	1	5
0							6			
3					7					
9										
1									2	
5										
6										
2										
7		9								
4										
8				8			14			13

18 − 9 = ☐
16 − 9 = ☐
11 − 9 = ☐

18 − 9 = 9
16 − 9 = 7
11 − 9 = 2



18 − 9 = 9
17 − 8 = 9
16 − 7 = ☐
15 − 6 = ☐
14 − 5 = ☐
13 − 4 = ☐
12 − 3 = ☐
11 − 2 = ☐
10 − 1 = ☐

17 − 9 = 8
16 − 8 = 8
15 − 7 = ☐
14 − 6 = ☐
13 − 5 = ☐
12 − 4 = ☐
11 − 3 = ☐
10 − 2 = ☐

16 − 9 = 7
15 − 8 = 7
14 − 7 = ☐
13 − 6 = ☐
12 − 5 = ☐
11 − 4 = ☐
10 − 3 = ☐

15 − 9 = 6
14 − 8 = 6
13 − 7 = ☐
12 − 6 = ☐
11 − 5 = ☐
10 − 4 = ☐

14 − 9 = 5
13 − 8 = ☐
12 − 7 = ☐
11 − 6 = ☐
10 − 5 = ☐

13 − 9 = 4
12 − 8 = ☐
11 − 7 = ☐
10 − 6 = ☐

12 − 9 = 3
11 − 8 = ☐
10 − 7 = ☐

11 − 9 = 2
10 − 8 = ☐

10 − 9 = 1

11 − 1 = □

11 − 1 = 10

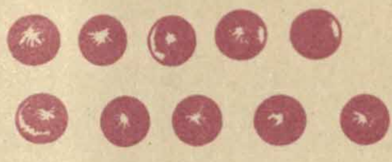
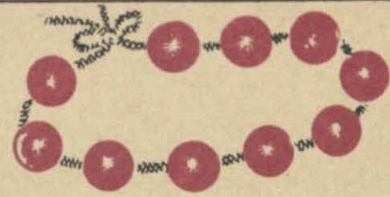
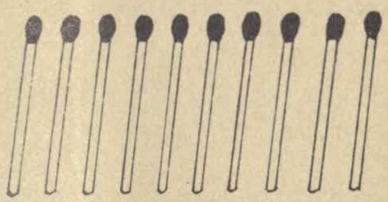
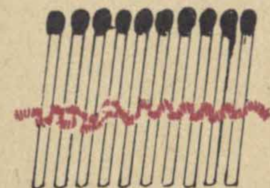
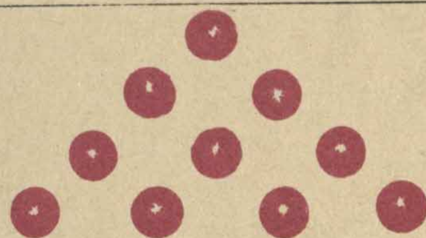
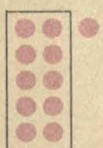
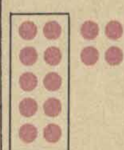
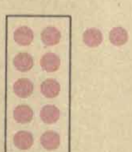
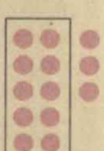
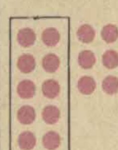


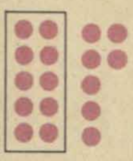
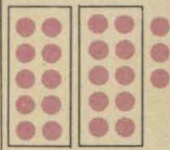
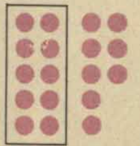
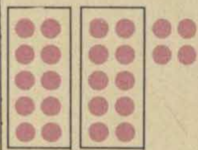
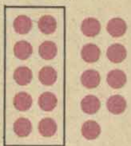
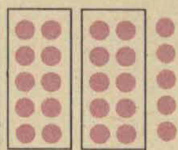
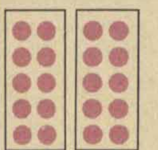
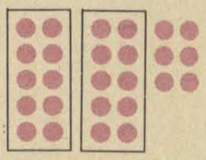
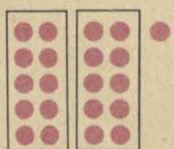
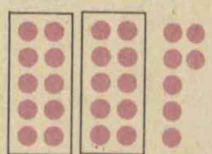
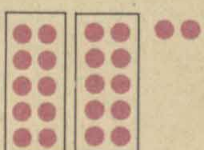
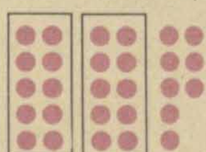
12 − 3 = □ 13 − 2 = □ 14 − 6 = □ 17 − 5 = □ 15 − 4 = □ 19 − 5 = □

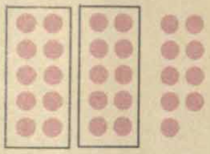
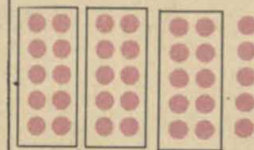
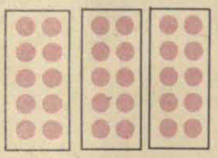
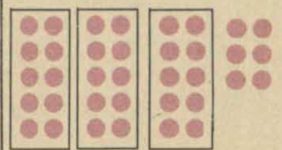
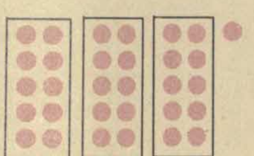
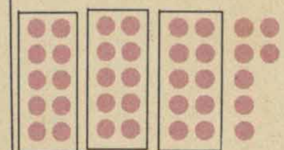
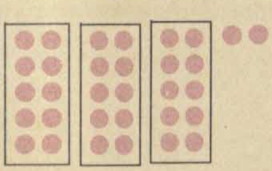
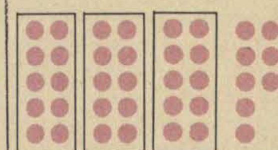
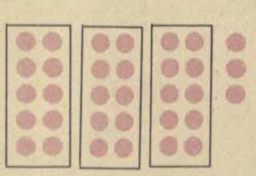
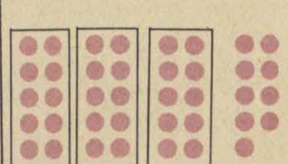
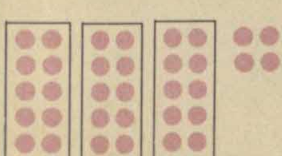
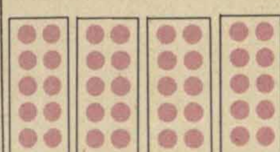
16 − 8 = □ 18 − 7 = □ 17 − 8 = □ 14 − 7 = □ 13 − 9 = □ 18 − 9 = □

−	18	17	16	15	14	13	12	11	10	9
9				6						
5	13									
2								9		
8						5				
6		11								
4									6	
3										
7					7					
0			16							
1										8

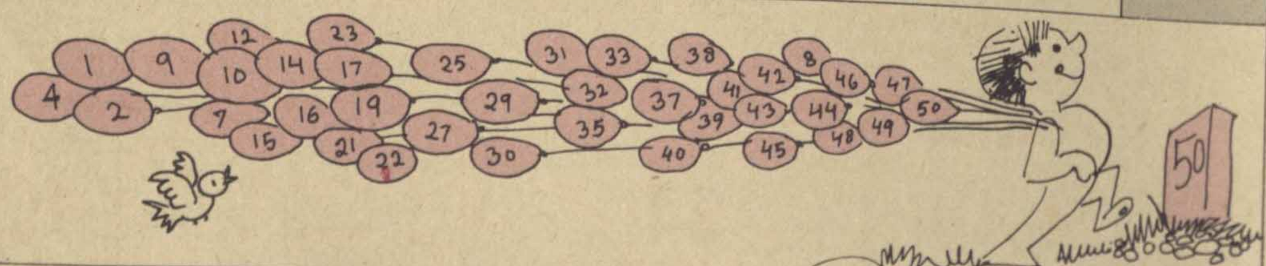
UNIT 8 Numbers up to HUNDRED

	10		10
	10		10
	10		10
 10 + 1 = 11	11	 10 + 4 = 14	14
 10 + 2 = 12	12	 10 + 5 = 15	15
 10 + 3 = 13	13	 10 + 6 = 16	16

 10 + 7 = 17	**17**	 20 + 3 = 23	**23**
 10 + 8 = 18	**18**	 20 + 4 = 24	**24**
 10 + 9 = 19	**19**	 20 + 5 = 25	**25**
 10 + 10 = 20	**20**	 20 + 6 = 26	**26**
 20 + 1 = 21	**21**	 20 + 7 = 27	**27**
 20 + 2 = 22	**22**	 20 + 8 = 28	**28**

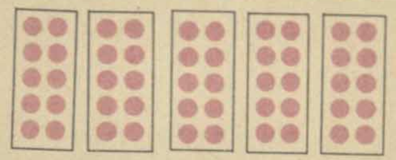
 20 + 9 = 29	**29**	 30 + 5 = 35	**35**
 20 + 10 = 30	**30**	 30 + 6 = 36	**36**
 30 + 1 = 31	**31**	 30 + 7 = 37	**37**
 30 + 2 = 32	**32**	 30 + 8 = 38	**38**
 30 + 3 = 33	**33**	 30 + 9 = 39	**39**
 30 + 4 = 34	**34**	 30 + 10 = 40	**40**

40 + 1 = 41	**41**	40 + 6 = 46	**46**
40 + 2 = 42	**42**	40 + 7 = 47	**47**
40 + 3 = 43	**43**	40 + 8 = 48	**48**
40 + 4 = 44	**44**	40 + 9 = 49	**49**
40 + 5 = 45	**45**	40 + 10 = 50	**50**



1	2					7			10
11	12				16				20
21			24					29	
	32					37			
41				45			48		50

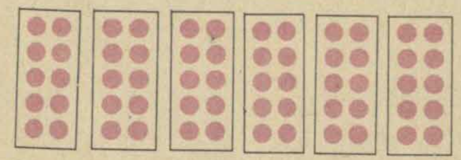
50	49	48				44	43		41
40		38			35				31
		28				24			21
20			17			14			
10							3	2	1



40 + 10 = 50

50

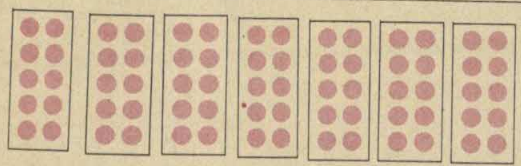
50 + 1 = 51
50 + 2 = 52
50 + 3 = 53
50 + 4 = 54
50 + 5 = 55
50 + 6 = 56
50 + 7 = 57
50 + 8 = 58
50 + 9 = 59



50 + 10 = 60

60

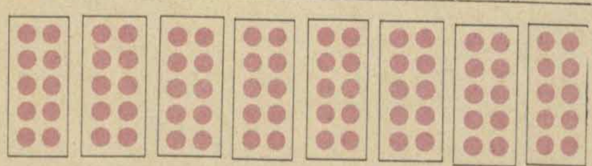
60 + 1 = 61
60 + 2 = 62
60 + 3 = 63
60 + 4 = 64
60 + 5 = 65
60 + 6 = 66
60 + 7 = 67
60 + 8 = 68
60 + 9 = 69



60 + 10 = 70

70

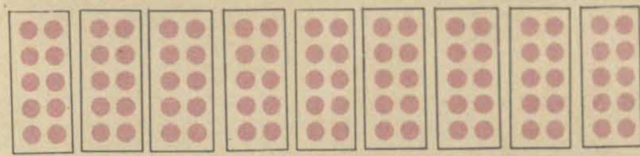
70 + 1 = 71
70 + 2 = 72
70 + 3 = 73
70 + 4 = 74
70 + 5 = 75
70 + 6 = 76
70 + 7 = 77
70 + 8 = 78
70 + 9 = 79



70 + 10 = 80

80

80 + 1 = 81
80 + 2 = 82
80 + 3 = 83
80 + 4 = 84
80 + 5 = 85
80 + 6 = 86
80 + 7 = 87
80 + 8 = 88
80 + 9 = 89



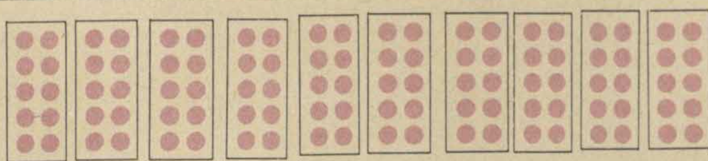
80 + 10 = 90

90

90 + 1 = 91 90 + 2 = 92 90 + 3 = 93

90 + 4 = 94 90 + 5 = 95 90 + 6 = 96

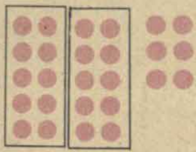
90 + 7 = 97 90 + 8 = 98 90 + 9 = 99



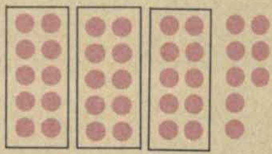
90 + 10 = 100

100

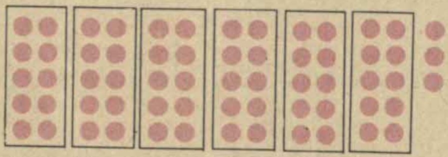
51	52		54		56				60
61	62			65			68		70
	72					77		79	
81		83					88		90
	92			95					100



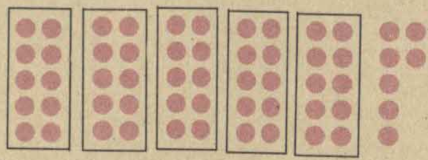
2 tens and 6 ones	26



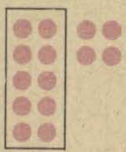
3 tens and 8 ones	



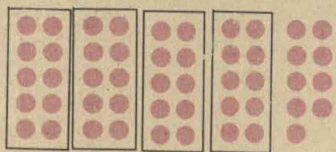
6 tens and 3 ones	



5 tens and 7 ones	



1 ten and 4 ones	



4 tens and 9 ones	

1 ten	10	1 ten and 1 one	11
2 tens		2 tens and 2 ones	
3 tens		3 tens and 3 ones	
4 tens		4 tens and 4 ones	
5 tens		5 tens and 5 ones	
6 tens		6 tens and 6 ones	
7 tens		7 tens and 7 ones	
8 tens		8 tens and 8 ones	
9 tens		9 tens and 9 ones	
10 tens		10 tens and 10 ones	

100	99	98	97				93		91
90				86				82	
	79				75				71
70			67			64			
							53		
50								42	41
		38			35				
30				26					21
	19					14			
10			7			4		2	1

39 ☐ tens and ☐ ones

39 [3] tens and [9] ones



27	☐ tens and	☐ ones	88	☐ tens and ☐ ones
45	☐ tens and	☐ ones	63	☐ tens and ☐ ones
36	☐ tens and	☐ ones	14	☐ ten and ☐ ones
52	☐ tens and	☐ ones	99	☐ tens and ☐ ones
70	☐ tens and	☐ one	40	☐ tens and ☐ one
91	☐ tens and	☐ one	78	☐ tens and ☐ ones

35 = 30 + □ 42 = □ + 2	35 = 30 + [5] 42 = [40] + 2



17 = 10 + □	24 = □ + 4	40 = 40 + □
63 = 60 + □	39 = □ + 9	75 = 70 + □
92 = 90 + □	88 = □ + 8	57 = □ + 7
26 = 20 + □	71 = □ + 1	99 = □ + 9

52 □ 54	27 □	□ 63	□ 46 □
52 [53] 54	27 [28]	[62] 63	[45] 46 [47]



12 □ 14	47 □	□ 59	□ 68 □
23 □ 25	58 □	□ 67	□ 59 □
46 □ 48	99 □	□ 70	□ 43 □
79 □ 81	30 □	□ 91	□ 72 □
65 □ 67	25 □	□ 83	□ 30 □
50 □ 52	71 □	□ 46	□ 27 □
31 □ 33	66 □	□ 38	□ 15 □
87 □ 89	14 □	□ 25	□ 81 □
94 □ 96	83 □	□ 12	□ 94 □
68 □ 70	10 □	□ 100	□ 10 □

69		71
55		44

69	<	71
55	>	44



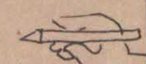
78		80
92		39
27		72
46		64
82		81

33		22
70		80
99		66
31		13
68		86

74		76
51		45
99		100
17		19
15		13

	Tens	Ones
38		

	Tens	Ones
38	3	8



	Tens	Ones
47	4	7
62		
16		
50		
71		
10		

	Tens	Ones
21		
39		
80		
93		
100		
44		

UNIT 9 More about Addition & Subtraction

10 + 4 = ☐

1 2 3 4 5 6 7 8 9 10 — — — —

10 11 12 13 14

10 + 4 = 14

12 + 7 = ☐

12 — — — — — — —

12 13 14 15 16 17 18 19

12 + 7 = 19

18 + 5 = ☐

18 — — — — —

18 19 20 21 22 23

18 + 5 = 23

45 + 6 = ☐

45 — — — — — —

45 46 47 48 49 50 51

45 + 6 = 51

68 + 7 = ☐

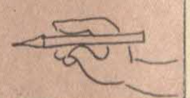
68 — — — — — — —

68 69 70 71 72 73 74 75

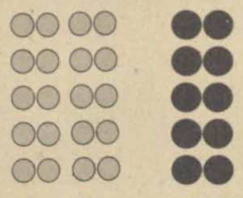
68 + 7 = 75

15 + 4 = ☐
7 + 28 = ☐

15 + 4 = 19
7 + 28 = 35

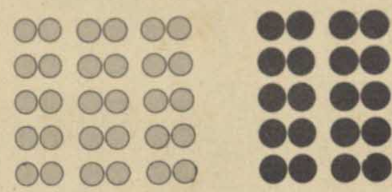


12 + 5 = ☐	6 + 11 = ☐	22 + 6 = ☐
25 + 3 = ☐	2 + 27 = ☐	41 + 7 = ☐
65 + 4 = ☐	5 + 53 = ☐	7 + 62 = ☐
37 + 3 = ☐	5 + 71 = ☐	92 + 5 = ☐
71 + 6 = ☐	7 + 82 = ☐	4 + 33 = ☐
44 + 4 = ☐	3 + 33 = ☐	2 + 22 = ☐
57 + 6 = ☐	6 + 45 = ☐	89 + 3 = ☐
88 + 7 = ☐	4 + 78 = ☐	65 + 9 = ☐
63 + 2 = ☐	6 + 37 = ☐	7 + 19 = ☐
46 + 7 = ☐	1 + 64 = ☐	5 + 29 = ☐



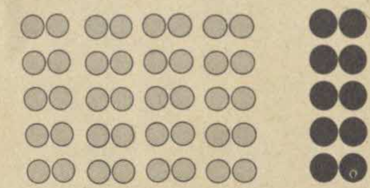
20 + 10 = 30

20
+10
30



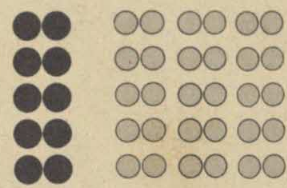
30 + 20 = 50

30
+20
50



40 + 10 = 50

40
+10
50



10 + 30 = 40

10
+30
40

60+10=

20+70=

60	20
+10	+70

60+10=70

20+70=90



60	20
+10	+70
70	90

30 + 50 =

40 + 30 =

60 + 20 =

30 + 40 =

70 + 10 =

20 + 60 =

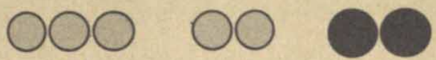
50 + 10 =

10 + 30 =

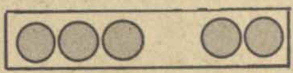
20 + 20 =

40 + 50 =

20	30	30	80
+50	+30	+60	+10
40	10	20	50
+20	+30	+70	+40

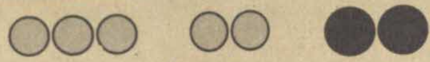


3 + 2 + 2

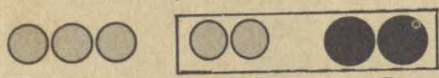


3 + 2 + 2

5 + 2 = 7



3 + 2 + 2

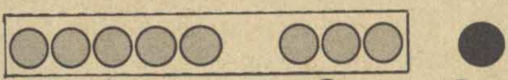


3 + 2 + 2

3 + 4 = 7

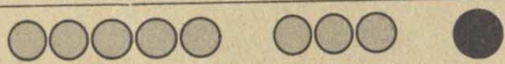


5 + 3 + 1

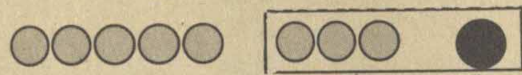


5 + 3 + 1

8 + 1 = 9



5 + 3 + 1



5 + 3 + 1

5 + 4 = 9

4 + 3 + 2 = ☐
7 + 2 = 9

4 + 3 + 2 = ☐
4 + 5 = 9

2 + 1 + 3 = ☐

2	
+1	3
+3	+3
☐	6

2 + 1 + 3 = ☐

2	2
+1	
+3	+4
☐	6

1 + 2 + 1 = ☐

1 + 2 + 1 = 4



2	2
+1	+1
+3	+3
☐	6



5 + 1 + 3 = ☐
2 + 4 + 1 = ☐
5 + 2 + 2 = ☐
2 + 6 + 1 = ☐

2	4	2	6
+5	+4	+2	+2
+2	+1	+2	+1
☐	☐	☐	☐

$6 + 5 + 4 = ☐$

$11 + 4 = 15$

$7 + 4 + 5 = ☐$

$7 + 9 = 16$

$5 + 6 + 7 = ☐$

$$\begin{array}{r} 5 \\ +6 \\ +7 \\ \hline ☐ \end{array} \rightarrow \begin{array}{r} 11 \\ +7 \\ \hline 18 \end{array}$$

$8 + 7 + 9 = ☐$

$$\begin{array}{r} 8 \\ +7 \\ +9 \\ \hline ☐ \end{array} \rightarrow \begin{array}{r} 15 \\ +9 \\ \hline 24 \end{array}$$

$5 + 6 + 7 = ☐$

$5 + 6 + 7 = 18$



$$\begin{array}{r} 7 \\ +6 \\ +8 \\ \hline ☐ \end{array} \qquad \begin{array}{r} 7 \\ +6 \\ +8 \\ \hline 21 \end{array}$$



$2 + 7 + 9 = ☐$

$4 + 7 + 9 = ☐$

$7 + 7 + 7 = ☐$

$8 + 8 + 8 = ☐$

$7 + 9 + 9 = ☐$

$8 + 7 + 6 = ☐$

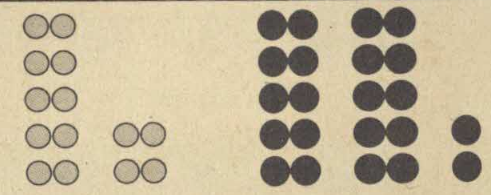
$5 + 6 + 8 = ☐$

$6 + 6 + 6 = ☐$

$$\begin{array}{r} 7 \\ +5 \\ +4 \\ \hline ☐ \end{array} \qquad \begin{array}{r} 9 \\ +9 \\ +9 \\ \hline ☐ \end{array} \qquad \begin{array}{r} 2 \\ +9 \\ +8 \\ \hline ☐ \end{array}$$

$$\begin{array}{r} 6 \\ +6 \\ +5 \\ \hline ☐ \end{array} \qquad \begin{array}{r} 8 \\ +9 \\ +8 \\ \hline ☐ \end{array} \qquad \begin{array}{r} 6 \\ +7 \\ +8 \\ \hline ☐ \end{array}$$

$$\begin{array}{r} 9 \\ +4 \\ +7 \\ \hline ☐ \end{array} \qquad \begin{array}{r} 6 \\ +8 \\ +9 \\ \hline ☐ \end{array} \qquad \begin{array}{r} 8 \\ +5 \\ +7 \\ \hline ☐ \end{array}$$



14 + 22 = ▢

14	1 ten and 4 ones	10 + 4
22	2 tens and 2 ones	20 + 2
	3 tens and 6 ones	30 + 6

14	(10 + 4)	14
+22	+(20 + 2)	+22
	30 + 6	36

46	(40 + 6)	46
+42	+(40 + 2)	+42
	80 + 8	88

51	(50 + 1)	51
+27	+(20 + 7)	+27
	70 + 8	78

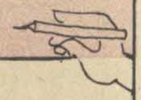
54	(50 + 4)	54
+25	+(20 + 5)	+25
	70 + 9	79

33	(30 + 3)	33
+33	+(30 + 3)	+33
	60 + 6	66

63	(60 + 3)	63
+15	+(10 + 5)	+15
	70 + 8	78

77	(70 + 7)	77
+22	+(20 + 2)	+22
	90 + 9	99

22 +33 ▢	48 +21 ▢	64 + 5 ▢	22 +33 55	48 +21 69	64 + 5 69



44 +44	66 +22	55 +22	77 +11	33 +66
76 +23	47 +52	31 +58	64 +15	43 +25
64 +30	20 +75	50 +49	19 +70	44 +20
36 + 2	43 + 3	80 + 6	27 + 1	72 + 5
8 +21	4 +93	5 +50	1 +48	6 +43
73 +16	59 +20	7 +41	13 + 6	55 +44

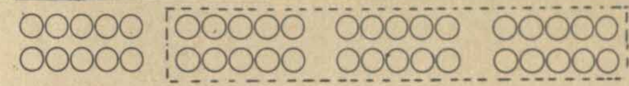
2	4	6	8						20
22								38	40

10	20	30							100

5	10	15	20						50

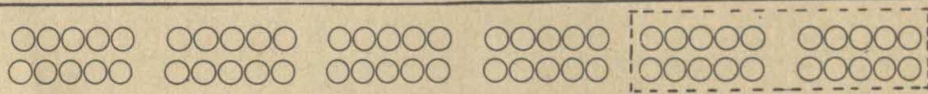
3	6	9	12						30

4	8	12	16						40



$40 - 30 = 10$

$$\begin{array}{r} 40 \\ -30 \\ \hline 10 \end{array}$$



$60 - 20 = 40$

$$\begin{array}{r} 60 \\ -20 \\ \hline 40 \end{array}$$

$30 - 20 =$ ■

$$\begin{array}{r} 80 \\ -40 \\ \hline ■ \end{array}$$

$30 - 20 =$ 10

$$\begin{array}{r} 80 \\ -40 \\ \hline 40 \end{array}$$



$20 - 10 =$ ■

$90 - 60 =$ ■

$50 - 30 =$ ■

$70 - 70 =$ ■

$40 - 20 =$ ■

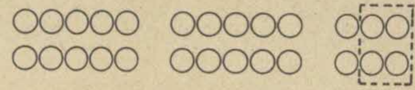
$60 - 50 =$ ■

$50 - 10 =$ ■

$$\begin{array}{r} 60 \\ -50 \\ \hline ■ \end{array} \quad \begin{array}{r} 80 \\ -70 \\ \hline ■ \end{array} \quad \begin{array}{r} 20 \\ -20 \\ \hline ■ \end{array} \quad \begin{array}{r} 50 \\ -10 \\ \hline ■ \end{array}$$

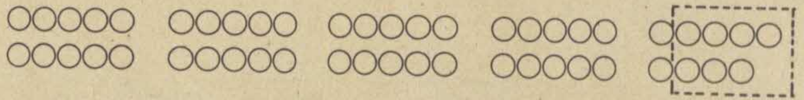
$$\begin{array}{r} 40 \\ -20 \\ \hline ■ \end{array} \quad \begin{array}{r} 90 \\ -70 \\ \hline ■ \end{array} \quad \begin{array}{r} 80 \\ -50 \\ \hline ■ \end{array} \quad \begin{array}{r} 90 \\ -90 \\ \hline ■ \end{array}$$

$$\begin{array}{r} 60 \\ -30 \\ \hline ■ \end{array} \quad \begin{array}{r} 70 \\ -40 \\ \hline ■ \end{array}$$



$$26 - 4 = \square$$

$$\begin{array}{r} 26 \\ -\ 4 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} (20 + 6) \\ -\qquad 4 \\ \hline 20 + 2 \\ \hline \end{array} \qquad \begin{array}{r} 26 \\ -\ 4 \\ \hline \boxed{22} \\ \hline \end{array}$$



$$49 - 7 = \square$$

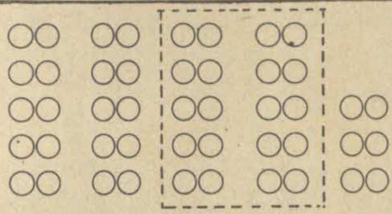
$$\begin{array}{r} 49 \\ -\ 7 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} (40 + 9) \\ -\qquad 7 \\ \hline 40 + 2 \\ \hline \end{array} \qquad \begin{array}{r} 49 \\ -\ 7 \\ \hline \boxed{42} \\ \hline \end{array}$$

$$\begin{array}{r} 47 \\ -\ 5 \\ \hline \square \\ \hline \end{array} \qquad \begin{array}{r} 47 \\ -\ 5 \\ \hline \boxed{42} \\ \hline \end{array}$$

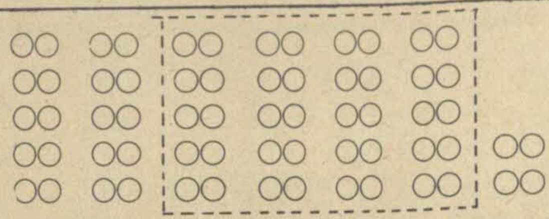


$$\begin{array}{r} 26 \\ -\ 3 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 97 \\ -\ 5 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 57 \\ -\ 4 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 99 \\ -\ 4 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 88 \\ -\ 8 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 18 \\ -\ 7 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 45 \\ -\ 5 \\ \hline \square \\ \hline \end{array}$$

$$\begin{array}{r} 49 \\ -\ 5 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 64 \\ -\ 2 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 79 \\ -\ 8 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 67 \\ -\ 3 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 49 \\ -\ 9 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 88 \\ -\ 6 \\ \hline \square \\ \hline \end{array} \quad \begin{array}{r} 39 \\ -\ 6 \\ \hline \square \\ \hline \end{array}$$



$46 - 20 =$ ▢



$64 - 40 =$ ▢

46	(40 + 6)	46	64	(60 + 4)	64
−20	−(20 + 0)	−20	−40	−(40 + 0)	−40
	20 + 6	26		20 + 4	24

88	(80 + 8)	88	97	(90 + 7)	97
−50	−(50 + 0)	−50	−80	−(80 + 0)	−80
	30 + 8	38		10 + 7	17

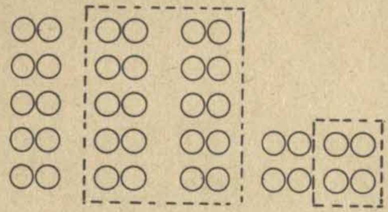
55	55	92	92
−30	−30	−60	−60
▢	25	▢	32

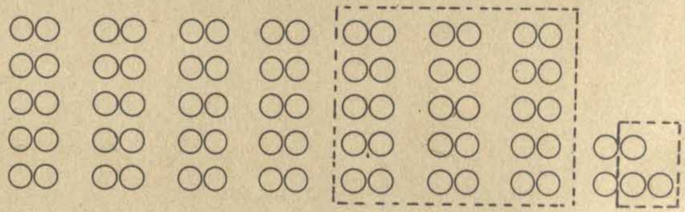




86	97	84	63	77	81
−60	−70	−40	−20	−40	−50
▢	▢	▢	▢	▢	▢

59	36	66	85	40	93
−40	−20	−30	−70	−40	−80
▢	▢	▢	▢	▢	▢

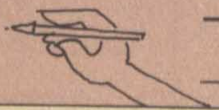




$38 - 24 = \square$ $75 - 33 = \square$

$\begin{array}{r} 38 \\ -24 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} (30+8) \\ -(20+4) \\ \hline 10+4 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ -24 \\ \hline \boxed{14} \\ \hline \end{array}$	$\begin{array}{r} 75 \\ -33 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} (70+5) \\ -(30+3) \\ \hline 40+2 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ -33 \\ \hline \boxed{42} \\ \hline \end{array}$
$\begin{array}{r} 84 \\ -31 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} (80+4) \\ -(30+1) \\ \hline 50+3 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ -31 \\ \hline \boxed{53} \\ \hline \end{array}$	$\begin{array}{r} 77 \\ -25 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} (70+7) \\ -(20+5) \\ \hline 50+2 \\ \hline \end{array}$	$\begin{array}{r} 77 \\ -25 \\ \hline \boxed{52} \\ \hline \end{array}$

$\begin{array}{r} 55 \\ -22 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 58 \\ -24 \\ \hline \square \\ \hline \end{array}$	$\begin{array}{r} 55 \\ -22 \\ \hline \boxed{33} \\ \hline \end{array}$	$\begin{array}{r} 58 \\ -24 \\ \hline \boxed{34} \\ \hline \end{array}$



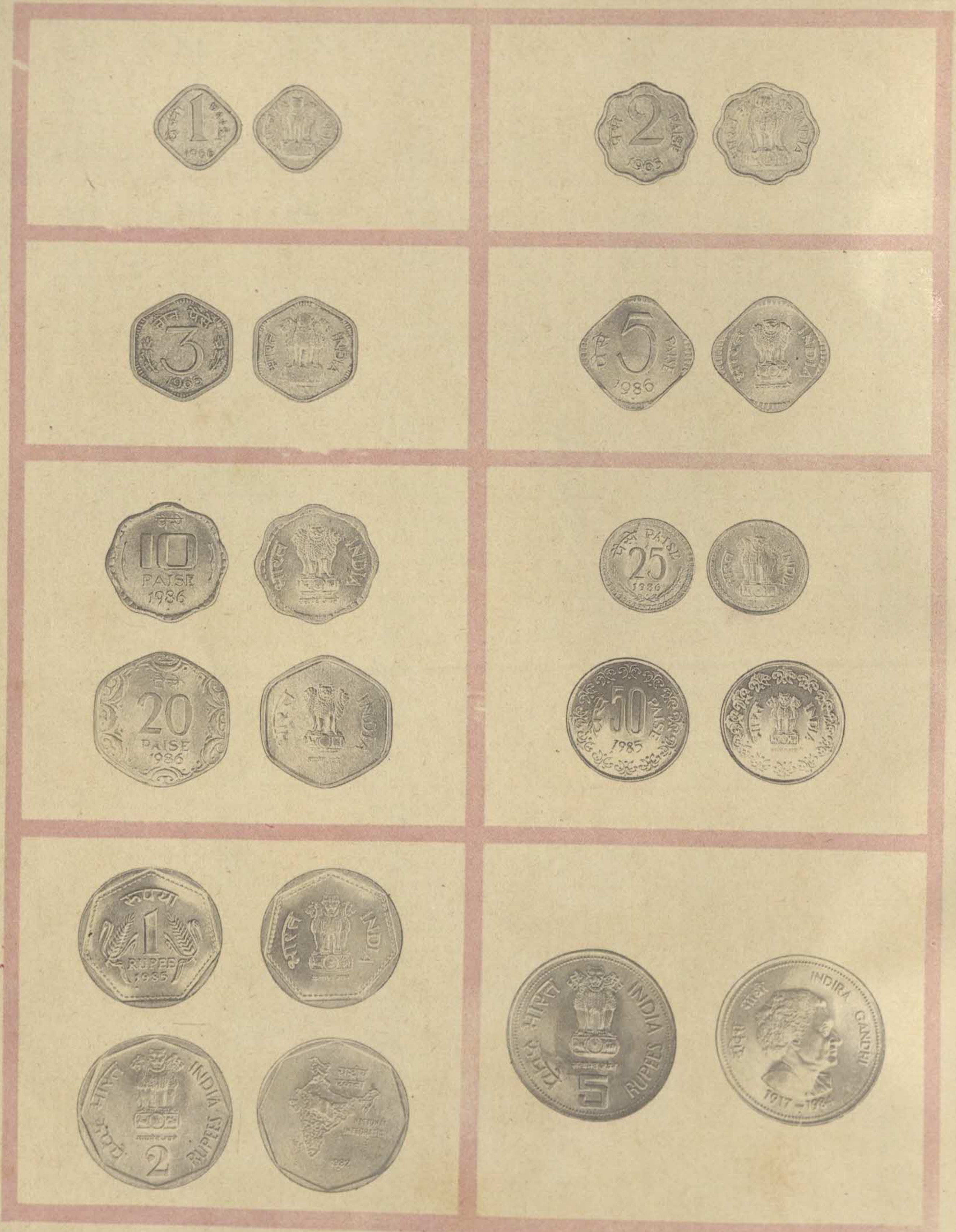
$\begin{array}{r} 44 \\ -22 \\ \hline \square \end{array}$	$\begin{array}{r} 66 \\ -33 \\ \hline \square \end{array}$	$\begin{array}{r} 77 \\ -44 \\ \hline \square \end{array}$	$\begin{array}{r} 99 \\ -66 \\ \hline \square \end{array}$	$\begin{array}{r} 33 \\ -11 \\ \hline \square \end{array}$	$\begin{array}{r} 88 \\ -44 \\ \hline \square \end{array}$
$\begin{array}{r} 22 \\ -11 \\ \hline \square \end{array}$	$\begin{array}{r} 33 \\ -22 \\ \hline \square \end{array}$	$\begin{array}{r} 66 \\ -66 \\ \hline \square \end{array}$	$\begin{array}{r} 55 \\ -33 \\ \hline \square \end{array}$	$\begin{array}{r} 58 \\ -24 \\ \hline \square \end{array}$	$\begin{array}{r} 69 \\ -27 \\ \hline \square \end{array}$
$\begin{array}{r} 83 \\ -51 \\ \hline \square \end{array}$	$\begin{array}{r} 67 \\ -42 \\ \hline \square \end{array}$	$\begin{array}{r} 79 \\ -38 \\ \hline \square \end{array}$	$\begin{array}{r} 47 \\ -36 \\ \hline \square \end{array}$	$\begin{array}{r} 77 \\ -34 \\ \hline \square \end{array}$	$\begin{array}{r} 97 \\ -75 \\ \hline \square \end{array}$

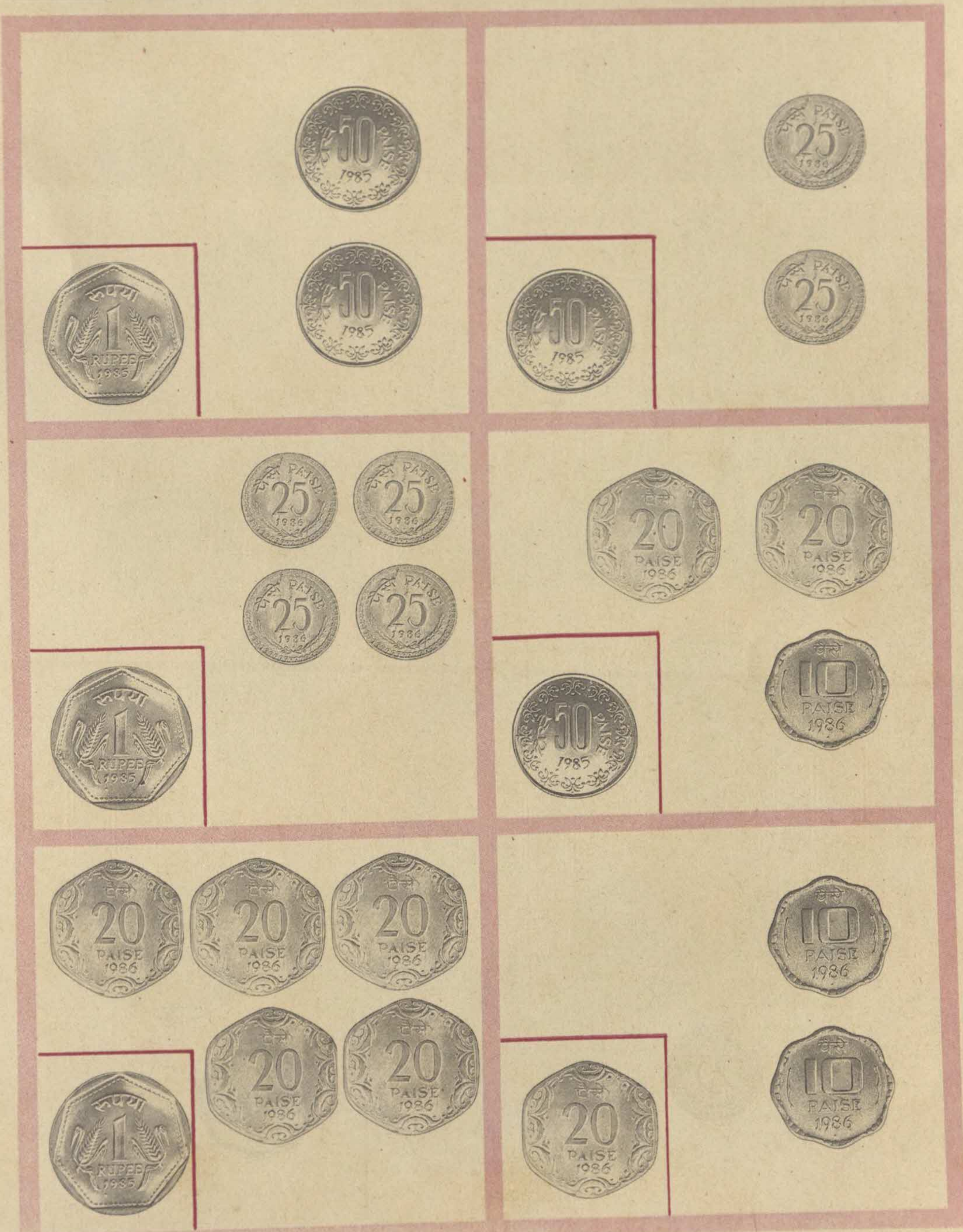
30	22	45	26	87	29	44	86
+40	+55	+32	+ 3	−30	− 5	−22	−32
▢	▢	▢	▢	▢	▢	▢	▢

30	22	45	26	87	29	44	86
+40	+55	+32	+ 3	−30	− 5	−22	−32
70	77	77	29	57	24	22	54

48	76	36	56
+20	−34	+40	−16
▢	▢	▢	▢
33	45	61	18
+15	−41	−14	+81
▢	▢	▢	▢
23	40	90	99
+36	+22	−40	−55
▢	▢	▢	▢
79	13	67	36
−47	+56	−44	−36
▢	▢	▢	▢
24	13	92	67
+24	+76	−21	− 6
▢	▢	▢	▢
42	77	22	48
+ 7	−12	+66	+ 7
▢	▢	▢	▢

UNIT 10 Indian Currency




50 PAISE 1985
50 PAISE 1985
रुपया 1 RUPEE 1985
PAISE 25 1986
PAISE 25 1986
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1
भारत सरकार
GOVERNMENT OF INDIA
एक रुपया
ONE RUPEE
34B 010432


2
भारतीय रिज़र्व बैंक
Reserve Bank of India
2
दो रुपये
20D 589474


पाँच रुपये
भारतीय रिज़र्व बैंक
Reserve Bank of India
5
5
5
49M 723999


10
RESERVE BANK OF INDIA
S 51 312748
भारतीय रिज़र्व बैंक
I PROMISE TO PAY THE BEARER THE SUM OF TEN RUPEES
10
S 51 312748
दस रुपये


20
RESERVE BANK OF INDIA
GUARANTEED BY THE CENTRAL GOVERNMENT
12S 147464
भारतीय रिज़र्व बैंक
20
GOVERNOR
12S 147464
बीस रुपये


50
RESERVE BANK OF INDIA
GUARANTEED BY THE CENTRAL GOVERNMENT
9KN 400989
भारतीय रिज़र्व बैंक
I PROMISE TO PAY THE BEARER THE SUM OF FIFTY RUPEES
50
GOVERNOR
9KN 400989
पचास रुपये


100
RESERVE BANK OF INDIA
GUARANTEED BY THE CENTRAL GOVERNMENT
JFS 165679
भारतीय रिज़र्व बैंक
केन्द्रीय सरकार द्वारा प्रत्याभूत
I PROMISE TO PAY THE BEARER THE SUM OF ONE HUNDRED RUPEES
100
मैं धारक को एक सौ रुपये अदा करने का वचन देता हूं।
GOVERNOR
JFS 165679
एक सौ रुपये

Instructional Manual

UNIT 1 Sizes, Shapes, Lengths and Positions

Learning Outcomes

After going through this unit, the learner should be able to

- arrange things which vary in size in order from the smallest to the biggest and vice versa.
- arrange things which vary in length in order from the shortest to the longest and vice versa.
- arrange things which vary in height in order from the shortest to the tallest and vice versa.
- arrange things which vary in thickness in order from the thinnest to the thickest and vice versa.
- classify objects and figures or cut-outs of objects according to their shapes.
- compare position of things and persons in terms of the distance from a given point of reference.
- compare the quantities of liquid in containers of the same size and shape and arrange the containers in order from the one which contains the least quantity of liquid to the one which contains the largest quantity of liquid.
- compare two collections of things by matching the members of one collection with the members of another collection using one-to-one correspondence.

Oral Vocabulary

Size:	big, small, same size, bigger, smaller, biggest, smallest
Length:	long, short, same length, longer, shorter, longest, shortest
Height:	tall, short, same height, taller, shorter, tallest, shortest
Thickness:	thick, thin, same thickness, thicker, thinner, thickest, thinnest
Shape:	similar, same shape, look alike
Position:	near, far, nearest, farthest
Quantity:	same quantity, more, less, larger, lesser, largest, least
Collection:	member, matching, one-to-one correspondence, more, fewer, as many as

Teaching-learning Activities

Allow the children to collect and handle different groups of objects available in the surroundings. Some objects will be similar and some will be different from others in terms of their size, colour, length, shape, etc. Encourage the children to describe a wide variety of things. This will help in developing the correct use of the descriptive and mathematical language related to a variety of mathematical activities.

Page 1

Draw attention of the children to the pictures of buckets at the top of the page. Instruct the

children to compare the sizes of the three buckets on the right with the size of the bucket on the left and ask:

> Of the three buckets on the right, which one is of the same size as that of the bucket on the left?
>
> Of the three buckets on the right, which one is bigger than the bucket on the left? Which one is smaller than the bucket on the left?
>
> Of the three buckets on the right, which one is the biggest? Which one is the smallest?

Draw attention of the children to the pictures of the tops. Instruct the children to compare the sizes of the three tops on the right with the size of the top on the left and ask:

> Of the three tops on the right, which one is of the same size as that of the top on the left?
>
> Of the three tops on the right, which one is bigger than the top on the left? Which one is smaller than the top on the left?
>
> Of the three tops on the right, which one is the biggest? Which one is the smallest?

Call the attention of the children to the picture in the middle of the page and ask:

> Of the two boys, who has the smaller ball? Who has the bigger ball?
>
> Of the two girls, who has the bigger ball? Who has the smaller ball?

Let the children compare the sizes of all the four balls in the hands of the children in the picture and ask:

> Who has the smallest ball?
>
> Who has the biggest ball?

Discuss the pictures of balls at the bottom of the page. Let the children compare the sizes of the balls in the picture on the left and ask:

> Which ball is the biggest?
>
> Which ball is the smallest?

Call attention to the pictures of balls on the right which depict the arrangement of balls from the biggest to the smallest and from the smallest to the biggest.

Show the children two leaves or wooden blocks and ask:

> Which leaf/wooden block is bigger?

Give five leaves of different sizes to children and ask:

> Which is the biggest leaf?
>
> Which one is the smallest?

Ask the children to arrange five leaves or stones in a line, from the biggest to the smallest and vice versa. Repeat the activity with other objects available in the surroundings.

Page 2

Draw attention of the children to the pictures of the iron nails shown at the top of the page. Instruct the children to compare the lengths of the three nails on the right with the length of that on the left and ask :

> Of the three nails on the right, which one is of the same length as that of the nail on the left?
>
> Of the three nails on the right, which one is longer than the nail on the left? Which one is shorter than the nail on the left?
>
> Of the three nails on the right which one is the longest? Which one is the shortest?

Draw attention of the children to the pictures of the combs. Instruct the children to compare the lengths of the three combs on the right with the length of the comb on the left and ask :

> Of the three combs on the right, which one is of the same length as that of the comb on the left?
>
> Of the three combs on the right, which one is longer than the comb on the left? Which one is shorter than the comb on the left?
>
> Of the three combs on the right, which one is the longest? Which one is the shortest?

Call the attention of the children to the

picture in the middle of the page and ask:

Of the two boys, who has the longer painting brush? Who has the shorter painting brush?

Of the two girls, who has the longer painting brush? Who has the shorter painting brush?

Of the four children, who has the shortest painting brush? Who has the longest painting brush?

Discuss the pictures of painting brushes given at the bottom of the page. Let the children compare the lengths of painting brushes in the picture on the left and ask:

Which painting brush is the longest? Which painting brush is the shortest?

Call attention to the pictures of painting brushes on the right which depict the arrangement of painting brushes from the longest to the shortest, and from the shortest to the longest.

Give a child two pieces of ribbon of different lengths and ask:

Which piece of ribbon is shorter? Which one is longer?

Give a child five pencils or sticks of different lengths and ask:

Which is the longest pencil? Which one is the shortest?

Ask the child to arrange them in a line from the shortest to the longest.

Repeat the activity with other objects available in the surroundings.

Page 3

Draw attention of the children to the flag-posts shown at the top of the page. Instruct the children to compare the heights of the three flag-posts on the right with that of the flag-post on the left and ask:

Of the three flag-posts on the right, which one is of the *same height* as that of the flag-post on the left?

Of the three flag-posts on the right, which one is *taller* than the flag-post on the left? Which one is *shorter* than the flag-post on the left?

Of the three flag-posts on the right, which one is the *tallest*? Which one is the *shortest*?

Call attention of the children to the picture in the middle of the page and ask:

Of the two girls, who is watering the taller plant? Who is watering the shorter plant?

Of the two boys, who is watering the taller plant? Who is watering the shorter plant?

Of the four children, who is watering the tallest plant? Who is watering the shortest plant?

Discuss the pictures at the bottom of the page. Let the children compare the heights of plants in the picture on the left and ask:

Which plant is the tallest? Which one is the shortest?

Call attention to the pictures of plants on the right which depict the arrangement of plants from the tallest to the shortest and from the shortest to the tallest.

Ask two children to stand near the door or the blackboard and ask:

Who is taller? Who is shorter?

Let five children stand near the blackboard and ask:

Who is the tallest? Who is the shortest?

Ask the sixth child to arrange the five children in a line from the tallest to the shortest and vice versa.

Repeat the activity with different groups of children in the class or with different objects which vary in height.

Page 4

Draw attention of the children to the pictures of the candles at the top of the page. Instruct the children to compare the thicknesses of the three candles on the right with the thickness of the candle on the left and ask:

Of the three candles on the right, which one is of the same thickness as that of the candle on the left?

Of the three candles on the right, which one is thicker than the candle on the left? Which one is thinner than the candle on the left?

Of the three candles on the right, which one is the thickest? Which one is the thinnest?

Draw attention of the children to the pictures of the pieces of bamboo. Instruct the children to compare the thicknesses of the three pieces of bamboo on the right with the thickness of the piece of bamboo on the left and ask:

Of the three pieces of bamboo on the right, which one is of the same thickness as that of the piece of bamboo on the left?

Of the three pieces of bamboo on the right, which one is thicker than the piece of bamboo on the left? Which one is thinner than the piece of bamboo on the left?

Of the three pieces of bamboo on the right, which one is the thickest? Which one is the thinnest?

Call the attention of the children to the picture in the middle of the page and ask:

Of the two boys, who is holding the thicker tree? Who is holding the thinner tree?

Of the two girls, who is holding the thicker tree? Who is holding the thinner tree?

Of the four children, who is holding the thickest tree? Who is holding the thinnest tree?

Draw the attention of the children to the pictures of books at the bottom of the page. Ask them to compare the thickness of the books in the picture on the left and ask:

Which book is the thickest? Which book is the thinnest?

Call attention to the pictures of books on the right which depict the arrangement of books from the thickest to the thinnest and from the thinnest to the thickest.

Let the children collect two sticks of different thicknesses and ask:

Which stick is thicker? Which one is thinner?

Let the children collect four or five sticks of different thicknesses and ask:

Which stick is the thickest? Which one is the thinnest?

Ask the children to arrange the sticks in order from the thickest to the thinnest or the thinnest to the thickest.

Repeat the activity with wooden planks or needles which vary only in thickness.

Page 5

Draw attention of the children to the pictures of objects given at the top of the page. Instruct the children to observe the similarities in the shapes of objects shown in the pictures.

Call attention to the picture in the middle of the page and say:

Observe the objects in the hands of the children and on the floor. Which of them are of the same shape?

Draw the attention of the children to the pictures of objects given at the bottom of the page. Instruct them to observe similarities between the shapes of figures shown in the picture.

Give pictures or cut-outs of different three-dimensional or two-dimensional objects of different sizes and shapes and ask the children to group the objects of similar shapes i.e. shapes which look alike.

Page 6

Discuss the picture given at the top of the page with the children and ask:

Who is nearest to the school building?

Who is farthest from the school building?

Who is nearest to the school gate?

Call attention to the pictures given at the bottom of the page and ask:

Which elephant is nearest to the man?

Which elephant is farthest from the man?

Page 7

Draw attention of the children to the pictures of jugs shown at the top of the page. Instruct the children to compare the quantities of water/liquid in the three jugs on the right with the quantity of the water/liquid in jug on the left and ask:

Of the three jugs on the right, which jug has the same quantity of water/liquid as the quantity of water/liquid in the jug on the left?

Of the three jugs on the right, which one has more quantity of liquid than the water/liquid in the jug on the left? Which jug has less quantity of water/liquid than the quantity of water/liquid in the jug on the left?

Of the three jugs on the right, which contains the largest quantity of water/liquid? Which one contains the least quantity of water/liquid?

Draw attention of the children to the pictures of the bottles. Instruct the children to compare the quantity of water/liquid in the bottles on the right with the quantity of water/liquid in the bottle on the left and ask:

Of the three bottles on the right, which bottle contains the same quantity of water/liquid as the quantity of water/liquid in the bottle on the left?

Of the three bottles on the right, which bottle contains more water/liquid than the quantity of the water/liquid in the bottle on the left? Which contains less quantity of water/liquid than the quantity of water/liquid in the bottle on the left?

Of the three bottles on the right, which bottle contains the largest quantity of water/liquid? Which contains the least quantity of liquid/water?

Call attention of the children to the picture in the middle of the page and ask:

Of the four boys, who has the glass with largest quantity of water/liquid. Who has the glass with least quantity of water/liquid?

Draw the attention of the children to the pictures of mugs at the bottom of the page. Ask the children to compare the quantity of water/liquid in each mug shown in the picture on the left and ask:

Which mug contains the largest quantity of water/liquid?

Which mug contains the least quantity of water/liquid?

Call attention to the pictures of mugs on the right which depict the arrangement of mugs in order from the one which contains the least quantity of water/liquid to the one which contains the largest quantity of water/liquid.

Page 8

Discuss the pictures of leaves and mangoes given at the top of the page. Introduce the concept of collection as any group of objects or things. Introduce the groups of leaves and mangoes as the collection of leaves and the collection of mangoes, respectively. Give examples of different collections. The objects or things in a collection may be referred to as members of the collection or things in the collection.

Demonstrate to the children how to find out which of the given two collections has more or fewer members. Explain the matching of the members of one collection with the members of another collection. Tell them that in the given pairs of collections, members of the collections can be matched by drawing a line from a member of one

collection to a member of the other collection. Introduce the idea of *one-to-one match* or *one-to-one correspondence.*

Allow the children to carry out many activities involving matching of objects/things available in the environment. For example, a ball for each child, a pencil for each child, etc.

Give two collections containing an equal number of objects/things and ask the children to match the members of the two collections. Tell them that if no member is left over after matching the two collections, then one collection is said to have *as many members* as in the other collection.

Draw the attention of the children to the pictures of collections of objects given at the top of the page. Draw their attention to the first row. Point out that the row contains two boxes, and that each box has two collections of objects in it. Now, say:

> Draw a line from each member of the collection on the left to a member of the collection on the right. [Let the children trace over the lines given.]

Discuss with children the two collections and make use of the terms *more than* and *fewer than* while comparing the two collections.

Draw the attention of the children to the pairs of collections of things shown in the second row. Ask them to match the members of one collection with the members of another collection and ask:

> Are there more members in one collection than in the other? Which collection consists of fewer members?

Draw the attention of the children to the pairs of collections in the third row. Instruct them to match the members of two collections and find out whether the collection on the left has as many members as the other collection or whether it has more or fewer members than the other collection.

Repeat the activity with the next pair of collection.

Point to the pictures given at the bottom of the page and say:

> Draw enough balls so that there will be as many balls as the bats.

Help the children in drawing the pictures of balls.

Draw the attention to the picture of cups and saucers and say:

> Draw enough cups so that there will be as many cups as the saucers.

Help the children in drawing the pictures of cups

Repeat the exercise with the next picture of spoons and bowls.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises, check their answers/responses. Provide remedial activities/instruction to ensure the attainment of the learning outcomes by each child.

UNIT 2 Numbers from One to Nine

Learning Outcomes

After going through this unit, the learner should be able to

- identify the number of objects/things in a collection having not more than nine members.
- read and write numerals from 1 to 9.
- match the collection with the numeral which represents the number of members in the collection.
- arrange given collections of objects/things in order from the collection

having the least number of objects/things to the one having the largest number of objects/things and vice versa.

Oral Vocabulary

Number, Numeral, Order of numbers, Counting, One, Two, Three, Four, Five, Six, Seven, Eight, Nine

Teaching-learning Activities

The matching of two collections having the same number of objects/things performed in the last unit i.e. Unit 1, leads the children to the concept of numbers. Introduce the children to more pairs of collections having the same number of objects/things. For example, put before them three or four collections, each consisting of three objects/things and explain to the children that all the collections belong to the family of collections having the same number of objects/things i.e. three. It is essential that the child's initial experiences of numbers come from concrete materials. After introducing collections consisting of the same objects/things, introduce collections of objects/things consisting of different objects/things.

Page 9

Discuss the picture on the top of the page. Ask the children to name the items in the pictures that are of the same kind. The child's answer should be:

> A man, a cow, a basket, a hut, a peacock, and a tub.

Draw the attention of the children to the picture of a man, a hut and a tub shown in the middle of the page, and say:

> There is one man, one hut and one tub. Each of them belongs to the family of collections having the same number of members. Each collection has one member.

Point to the symbol shown on the right of the picture of the man and say:

> This is the symbol for the number 'one' The symbol that stands for a number is called the numeral.

Similarly, point to the symbols given on the right of the picture of the hut and the tub and say:

> These are also symbols for the number 'one'. A numeral is a symbol representing the number of things in a collection. The term 'numeral' is used while referring to the written symbol for the number, otherwise the word 'number' is used.

Draw the attention of the children to the numeral 1 and the sequence of steps involved in writing the numeral 1. Ask the children to write the numeral 1 in the space provided at the bottom of the page. Ask children to write the numeral 1 at least ten times in their notebooks or slates.

Page 10

Draw the attention of the children to the picture at the top of the page. It consists of pictures of farmers, wheels, bullocks, and a dog and a tree. Ask the children to identify the collections that are of the same kind.

Call attention to the pictures of farmers, bullocks and wheels shown in the middle of the page. Let them observe the collections of farmers, bullocks and wheels. Make them realise that each one of the collections has as many members as the other i.e. two. Now, say:

> The number of farmers is two, the number of bullocks is two and the number of wheels is two. In other words, there are two farmers, two bullocks and two wheels. Two is one and one more.

Point to the symbol on the right of the pictures of farmers, bullocks and wheels and say:

> This is the symbol for the number 'two'. In other words, this is the numeral for two.

Draw the attention of the children to the numeral 2 and the sequence of writing the

numeral 2. Ask the children to write the numeral 2 in the space provided for it. Ask them to write the numeral 2 at least ten times in their notebooks or slates.

Pages 11 to 13

Introduce the numbers three to five and the corresponding numerals 3 to 5 by following the procedure adopted for the introduction of numbers one and two and their numerals 1 and 2. Help the children to understand the following:

> The number three and the numeral 3 are ways to describe a collection with three members. Three is two and one more.
>
> The number four and the numeral 4 are ways to describe a collection with four members. Four is three and one more.
>
> The number five and the numeral 5 are ways to describe a collection with five members. Five is four and one more.

Page 14

Draw the attention of the children to the collections given on the page. Ask a child to read the numerals and say:

> Draw a line from the numeral 1 to the collections that have only one member.
>
> Draw a line from the numeral 2 to the collections that have two members.
>
> Draw a line from the numeral 3 to the collections that have only three members and draw a line from the numeral 4 to the collections that have only four members.

Page 15

Draw the attention of the children to the collections given at the top of the page and say:

> Draw a line from the numeral 5 to the collections that have only five members.

Draw the attention of the children to the collections of objects/things indicated on the left side of the page and ask them to encircle the numeral which represents the number of objects/things in the collection. Explain the given example.

Call the attention of the children to the collections given on the right side of the page and ask them to write the numeral corresponding to the number of members in each collection. Explain the given example and instruct the children to write their answers in ▢

Pages 16 to 19

Introduce the numbers six to nine and their numerals 6 to 9 following the procedure that was adopted for the introduction of numbers one to five and their numerals. Make the children recognise the following:

> The number six and the numeral 6 are ways to describe a collection with six members. Six is five and one more.
>
> The number seven and the numeral 7 are ways to describe a collection with seven members.
> Seven is six and one more.
>
> The number eight and the numeral 8 are ways to describe a collection with eight members.
> Eight is seven and one more.
>
> The number nine and the numeral 9 are ways to describe a collection with nine members.
> Nine is eight and one more.

Page 20

Draw the attention of the children to the collections shown on the page. Ask the children to read the numerals given on the page. Call the attention of the children to the numeral 6 and ask them to draw a line from it to the collections that have only six members. Repeat the activity with the other numerals given on the page.

Pages 21 and 22

Ask the children to read the numerals on the page and say:

> Draw a line from each collection to the numeral that represents the number of

objects/things in the collection. [Let the children trace over the dotted line.]

Page 23

Draw the attention of the children to the collections given at the top of the page. Ask them to write the numerals corresponding to the number of members in each collection. Explain the example to the children and ask them to complete remaining exercises.

Discuss the picture given in the middle of the page. Draw their attention to the pictures of man, woman, sickle, bird, tree, cow and buffalo and the place holder (▢). Ask the children to write the numeral corresponding to the number of men, women, sickles, birds, trees, cows and buffaloes in the picture given in the middle of the page.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises, check their answers/ responses. Provide remedial activities/ instruction to ensure the attainment of the learning outcomes by each child.

UNIT 3 Ordering of Numbers

Learning Outcomes

After going through this unit, the learner should be able to

- arrange the given numerals from 1 to 9 in the ascending order of numbers.
- arrange the given numerals in the descending order of numbers.
- write the numeral corresponding to the number which comes in between two given numbers (numbers ranging from one to nine).
- identify the ordinal numbers corresponding to the positions of objects/persons arranged in order from left to right, right to left, bottom to top, top to bottom, front to back, back to front with respect to a point of reference (ordinal numbers up to ninth).
- identify the object/person corresponding to the given ordinal number (nine objects/persons arranged in a line, straight or curved).

Oral Vocabulary

Ascending order, Descending order, Just after, Just before, In between, First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth.

Teaching-learning Activities

Pages 24 and 25

Discuss with the children the pictures on pages 24 and 25. Tell them that the pictures depict a ticket window not yet opened and that people come to the window to buy the tickets.

Draw the attention of the children to the pictures and ask them to identify the number of persons shown in each picture.

Call attention to the first and the second pictures and ask:

> How many persons are there in the first picture? How many are there in the second?

After the children count the persons, say:

> There is one person shown in the first picture. There are two persons in the second—one is standing near the window and the other person is joining him. The number of persons in the second picture is one more than the number of persons in the first picture. Two is one and one more.

Similarly, ask the children to count the persons in the second and third pictures. Ask:

> How many persons are there in the third picture?

After the children count the persons in the third picture, say:

> There are two persons in the second picture. There are three persons in the third picture. The number of persons in the third picture is one more than the number of persons in the second picture. Three is two and one more.

Draw the attention of the children to the fact that the number of persons in the pictures, except in the first picture on page 24 is one more than the number of persons in the preceding picture. Say:

> Four is three and one more, five is four and one more, six is five and one more, seven is six and one more, eight is seven and one more, and nine is eight and one more. Thus, a given number is one more than the preceding number.

Ask the children to state the numbers from one to nine in ascending order and to write the numerals corresponding to them.

Draw the attention of the children to the numerals and the figures (☐) as indicated in the picture at the bottom of page 25. Ask them to draw the appropriate number of figures corresponding to the numerals indicated. Explain to them the examples shown against the numerals 1 and 6 and instruct them to complete the exercise on their own.

Take nine pieces of paper. Write the numerals 1 to 9 on them. Shuffle the pieces and place them one by one on the table or the floor. Ask the children to arrange them in such a way that the numerals written on the pieces of papers are arranged in ascending order of numbers.

Pages 26 and 27

Discuss the pictures on pages 26 and 27. Draw their attention to the first picture on page 26.

Ask the children to count the women standing in a queue to take water from the handpump as shown in the first picture. Instruct them to count the number of women standing in a queue in the second picture and ask:

> How many women are there in the first picture? How many women are standing in a queue in the second picture?

After the children count the persons in the first and second pictures, say:

> There are nine women standing in a queue in the first picture. There are eight women standing in a queue in the second picture. The number of women standing in a queue in the second picture is one less than that in the first picture. Eight is one less than nine or one less than nine is eight.

Draw the attention of the children to the subsequent pictures given on pages 26 and 27. Ask them to count the persons standing in a queue in each picture. Let the children recognise that seven is one less than eight, six is one less than seven, five is one less than six,.........., one is one less than two.

Ask the children to state the numbers from nine to one in descending order and write the numerals corresponding to them.

Draw the attention of the children to the numerals and the figures (☐) given at the bottom of the page. Explain the examples against the numerals 9 and 4. Ask them to draw figures (☐) corresponding to the number indicated by the numerals given. Ask the children to complete the exercise.

Take nine pieces of paper and write the numerals 1 to 9 on them. Shuffle the pieces of paper and place them one by one on the table/floor. Ask the children to arrange the pieces of paper in such a way that the numerals on the pieces would be in descending order of numbers (nine to one).

Page 28

Draw the attention of the children to the dots shown at the top of the page and ask them to join the dots with markings from 1 to 9 or 9 to 1.

Discuss both the exercises given on the page. Ask the children to observe the pattern and complete the exercises.

Page 29

Explain to the children the pictures shown at the top half of the page and discuss with them the order in which children bearing different chest numbers are arranged.

Discuss the exercises shown at the bottom of the page. Explain the given example and ask the children to complete the remaining exercises.

Page 30

Discuss with the children the pictures given at the top of the page. Explain the way in which the children bearing different chest numbers are arranged.

Discuss the exercises given on the page. Explain the given examples. Ask the children to observe the pattern and complete the exercises.

Page 31

Discuss the picture given at the top of the page. Point out that in the picture, the child nearest to the bus is the number one or the first child. The child in the middle is number two or the second child. The child farthest from the bus is number three or the third child.

Discuss the second picture on the page. Ask the children to begin from the left while answering questions about the boys running. Ask:

> Which boy is nearest to the finishing line? What is his position?
>
> What is the position of the other boys from the finishing line?

Tell the children that an ordinal number answers the questions of the type 'which one' or "what is the position of the object/person from an initial point of reference?"

Instruct the children to begin from the left while answering the questions about the objects shown in the third picture on the page:

> What is the position of the cup?
>
> What are the positions of the saucer, glass, flask, jug, ...?

Draw attention to the pictures of ants. Instruct children to begin from the bottom while referring to the position of each ant. Ask:

> Which one is in the third position?
>
> Which one is in the sixth position?
>
> Which one is in the fourth position?
>
> Which one is in the ninth position?

Draw attention to the last picture on the right. Ask:

> On which stair from the bottom, is the doll placed?
>
> On which stair from the top, is the doll placed?

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/ responses. Provide remedial activities/ instruction to ensure the attainment of the learning outcomes by each child.

UNIT 4 **Comparison of Numbers**

Learning Outcomes

After going through this unit, the learner should be able to

- indicate which of the two given numerals (1 to 9) represents a greater number by using the symbol > (is greater than).
- indicate which of the two given numerals (1 to 9) represents a smaller number, by using the symbol < (is less than).
- identify, out of the given numerals, the numeral corresponding to the greatest/smallest number.

Oral Vocabulary

Greater than, Less than.

Teaching-learning Activities

Page 32

Discuss the pictures at the top of the page and ask:

Who has more cricket balls?

Who has fewer cricket balls?

Who has more balloons?

Who has more flowers?

Who has fewer tops ?

Draw the attention of the children to the collection of cricket balls shown in the pictures given on the left side of the page. Call attention to the collections in the first picture and ask the children to observe the matching of cricket balls in the collection on the left with cricket balls in the collection on the right.

Instruct the children to trace over the dotted line to pair the cricket balls in the collections to determine which collection has fewer or more cricket balls.

Then ask:

Which collection has fewer cricket balls? How many does it have?

Which collection has more cricket balls? How many does it have?

After the children answer these questions, say:

The number of cricket balls in the collection on the left is five. The number of cricket balls in the collection on the right is four. The number of cricket balls in the collection on the left side is more than the number of cricket balls in the collection on the right.

Five is one more than four. Therefore, five is greater than four.

Write 5 > 4 on the blackboard.

Discuss the picture of tops (lattoos) on the right side of the page. Ask:

Which collection has fewer tops (lattoos)? How many does it have?

Which collection has more tops (lattoos)? How many does it have?

After the children answer these questions, say:

The number of tops (lattoos) in the collections on the left is six and the number of tops in the collection on the right is three. The number of tops in the collection on the left is more than the number of tops in the collection on the right.

Six is three more than three. Therefore, six is greater than three.

Write 6 > 3 on the blackboard.

Repeat the activity with the pairs of collections of balloons and flowers.

Draw attention to the figures(◎)given at the bottom of the page. Instruct the children to count the blue and red

coloured figures(○) Make the children recognise that the arrow points to the smaller of the two numbers.

Page 33

Discuss the picture at the top of the page and ask:

Of the two girls who has more flowers? How many does she have? Who has fewer number of flowers? How many does she have?

Of the two girls, who has fewer number of wooden blocks? How many does she have? Who has more wooden blocks? How many does she have?

Draw attention of the children to the collection of objects shown in the pictures given on the left side of the page. Call attention to the collections in the first picture. Instruct the children to draw lines to pair the members of the collections to determine which collection has more members. Then ask:

Which collection has fewer members? How many does it have?

Which collection has more members? How many does it have?

After the children answer these questions, say:

The collection on the left has six members. The collection on the right has eight members. The number of members in the collection on the left side is two less than the number of members in the collection on the right. Six is two less than eight.

Then write $6 < 8$ on the blockboard.

Discuss the collections of blocks on the right side of the page and make the children recognise that four is one less than five. Write $4 < 5$ on the blackboard.

Repeat the activity with the next pair of collections.

Draw attention to the pictures of red and blue figures(○)at the bottom of the page and make the children recognise that the arrow points to the smaller of the two numbers.

Page 34

Discuss the pictures at the top of the page and make the children find out the number of balloons each child has. Let them find out which child has more balloons.

Discuss the pairs of collections given on the left side of the page. Instruct the children to draw lines to pair the members of the collections and to determine which collection has fewer or more members. Then ask:

Which collection has fewer members? How many does it have?

Which collection has more members? How many does it have?

After the children answer these questions, say:

The collection on the left has seven members.

The collection on the right has four members. Therefore, seven is greater than four.

Let the children write $7>4$ on their slates.

Repeat the activity with the other pairs of collections.

Draw attention of the children to the pictures of blue and red coloured figures (○) given on the left and on the right of the page. Make the children recognise that the arrow points to the smaller of the two numbers.

Write the numerals 2 to 9 on the blackboard in a column. Ask the children to copy these numerals in their notebooks. Ask them to write the symbol >on the right of each numeral. Instruct the children to write (to the right of the symbol >) a numeral which represents a number less than the given number, (for example $2>1$, $3>2$, or $3>1$, $4>2$, or $4>3$,...........$9>7$, $9>4$ etc.)

Again write numerals 1 to 8 on the blackboard in a column. Ask the children to copy these numerals in their notebooks. Ask them to write the symbol < on the right of

each numeral. Instruct the children to write to the right of the symbol< a numeral which represents a number greater than the given number (for example, 1<2, 1<3, 2<3, or 2<4, 3<4, 3<5,...........8<9 etc.)

Page 35

Call attention to the pairs of collections shown in the upper half of the page. Ask the children to observe the collections on the left and on the right. Call attention to the symbols >and <. Explain the first two examples and ask the children to write an appropriate symbol > or < in □ between two numerals.

Call attention to the exercises given in the lower half of the page. Let them observe the examples shown on the page. Instruct them to work out the first two exercises. Write the answers to these exercises on the blackboard so that each child can check his/her answers. Now direct the children to complete the remaining exercises.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/responses. Provide remedial activities/instruction to ensure the attainment of the learning outcomes by each child.

UNIT 5 **Addition**

Learning Outcomes

After going through this unit, the learner should be able to

- generalise that addition is an operation involving joining of new members to a group or collection or putting together the objects/members of two collections.
- add two numbers, the sum not exceeding nine.

Oral Vocabulary

Is same as, Is equal to, Plus, Addition, Sum, Addition table

Teaching-learning Activities

This unit is devoted to the development of the concept of addition. Addition may be introduced as putting together or combining the members of two collections and then finding out the number of objects/members in the combined collection. Addition could also be introduced as joining of new members in a collection of objects/things. For example, a child could have two bananas and add another one, making three in the new collection. Initially, addition might involve counting of objects/things in collections, but later sufficient experience should be provided to add number of objects or members of two collections without counting separate items. The children should be enabled to recognise that two and three makes five without counting.

Page 36

Draw attention of the children to the pictures at the top of the page. Point out that in the picture on the left there are two children and in the picture in the middle one child is shown moving towards the two children and in the picture on the right all children are shown together. Draw attention to the idea that when one child joins the group of two children there are 2 plus 1 children in all. Write 2+1 on the blackboard and explain the meaning of plus (+) sign.

Discuss the pictures in the next two rows in the same manner. Read out and write 3 + 1 and 2 + 2 on the blackboard.

Page 37

Discuss the pictures at the top of the page. Draw attention of the children to the fact that in the picture on the left, there are two children, in the middle picture one child is shown moving towards the two children and in the picture on the right all the children are together. Then ask:

> When one child joins a group of two children, how many children will there be in all?

After the children answer the question, say:

> Two and one makes three. i.e. 2 plus 1 is 3.

Write on the blackboard 2+1=3. Point out that the numeral 2 represents the number of children in the first picture, the numeral 1 represents the number of children in the second picture and the numeral 3 represents the total number of children.

Discuss the pictures in the next row in the same manner. Tell the children that the pictures depict two ducks moving towards four ducks. Then ask:

> When two ducks join a group of four ducks, how many ducks will there be in all?

After the children answer the question, say:

> Four and two makes six i.e. 4 plus 2 is equal to 6.

Write on the blackboard, 4+2= 6. Point out that the numeral 4 represents the number of ducks in the picture on the left, 2 represents the number of ducks moving towards the four ducks and 6 represents the total number of ducks.

Discuss the pictures of birds at the bottom of the page in the same manner.

Page 38

Draw attention of the children to the collections of figures (△) shown in the pictures at the top of the page. Instruct the children to count the figures in the collections. Ask:

> How many things/members are there in the collection on the left side? How many are there in the collection in the middle? How many are there in the collection on the right?

After the children answer the question, say:

> Five objects and three objects put together make eight objects.
>
> Five and three makes eight i.e. 5 plus 3 is equal to 8.

Point out that 5 represents number of figures in one collection, 3 the number of figures in the other collection, and 8 the total number of figures. Then write 5 + 3 = 8 on the blackboard.

Discuss the remaining pairs of collections on the page.

Draw attention to the exercises given in the lower half of the page. Discuss the example. Read out 4 + 4 = 8 and write it on the blackboard.

Let the children observe the first solved exercise. Read 2+6 =8. Point out that 2 represents the members of one collection, 6 represents members of the other collection and 8 is the total number of members.

Ask the children to complete the remaining exercises given on the page. When they have finished, write the correct answers on the blackboard, so that each child can check his/her answers.

Page 39

Draw attention of the children to the rows of figures (○) in the left coloum. Point out that in the first row there are two figures (○) one of which is grey coloured and the other is pink coloured. Draw attention to the addition fact 1+ 1 = 2. Point out that 1 at the left represents the number of grey coloured figure (○) and 1 in the middle represents the number of pink-coloured figure (○) and 2 represents the total number of figures (○)

Let the children observe the figures (O) in the second row. Draw attention to the addition fact 2 + 1 = 3. Point out that 2 represents the number of grey coloured figures, 1 represents the number of pink coloured figures and 3 represents the total number of figures.

Draw attention to the figures in the subsequent rows and to the addition facts. Remind the children that in the addition facts, the first numeral from the left represents the number of grey coloured figures, the second numeral represents the number of pink coloured figures and the third numeral represents the total number of figures.

Instruct the children to complete the addition facts for numbers up to nine. Discuss the examples in respect of each number.

After the children complete the writing of the addition facts for numbers upto nine, draw the attention of the children to the following addition facts:

2 + 1 = 3	and	1 + 2 = 3
3 + 1 = 4	and	1 + 3 = 4
3 + 2 = 5	and	2 + 3 = 5
5 + 1 = 6	and	1 + 5 = 6
4 + 2 = 6	and	2 + 4 = 6
6 + 1 = 7	and	1 + 6 = 7
5 + 2 = 7	and	2 + 5 = 7
4 + 3 = 7	and	3 + 4 = 7
7 + 1 = 8	and	1 + 7 = 8
6 + 2 = 8	and	2 + 6 = 8
5 + 3 = 8	and	3 + 5 = 8
8 + 1 = 9	and	1 + 8 = 9
7 + 2 = 9	and	2 + 7 = 9
6 + 3 = 9	and	3 + 6 = 9
5 + 4 = 9	and	4 + 5 = 9

Make the child discover that two numbers added in either order give the same sum.

Page 40

Draw attention of the children to the exercises given on the page. Explain the examples and instruct the children to complete the exercises. Instruct them to write the appropriate numerals in ▢

Page 41

Draw attention to the exercises given. Explain the examples and instruct the children to write the appropriate numerals in

▢

Page 42

Draw attention of the children to the sums involving addition given at the top of the page. Instruct the children to write 3 + 1 = 4 on the slates/note books. Tell them that 3+ 1 = 4 can also be written as

$$\begin{array}{r} 3 \\ +1 \\ \hline 4 \\ \hline \end{array}$$

Ask them to write

$$\begin{array}{r} 3 \\ +1 \\ \hline 4 \\ \hline \end{array}$$

Draw attention to the sum given on the top right hand corner of the page. Ask children to write 6 + 3 = 9 on their slate. Tell them that 6+3=9 can also be written as

$$\begin{array}{r} 6 \\ +3 \\ \hline 9 \\ \hline \end{array}$$

Call attention to the exercises involving addition given in the middle of the page. Explain the examples and instruct the children to complete the exercises. Instruct them to write the sum in ▢

Page 43

Draw attention of the children to the addition tables given on the page. Draw a small addition table similar to the one shown at the top of the page. Ask the children to fill in the missing numerals. Explain the procedure for filling in the missing numerals in the table. Point out that they should begin with an entry on the left and then move to an entry at the top to find the particular combination (as illustrated by the arrows in the first table). Tell them that 4 indicates 2 + 2. In other words, they should take a number, such as 2,

from the left column, and add it to a number, such as 2, from the top row.

Ask the children to complete the next two addition tables by writing the missing numerals.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/responses. Provide remedial activities/instruction to ensure the attainment of the learning outcomes by each child.

UNIT 6 Subtraction

Learning Outcomes

After going through this unit, the learner should be able to

- subtract a number from another greater number (greater number not to exceed nine).
- identify zero as the number representing nothing or the absence of objects/members in a collection.
- find the sum of two numbers when one of them is zero.
- find the difference between a number and zero.

Oral Vocabulary

Subtraction, Minus, Subtraction table, Zero

Teaching-learning Activities

This unit is devoted to the development of the concepts of subtraction and zero and to the strengthening of the concept of addition. Subtraction is explored by presenting the ideas of *take away* and *the difference between.* The unit also deals with the inverse relationship between addition and subtraction.

Page 44

Discuss the pictures at the top of the page. Say: "The first picture shows three birds sitting on the branch of a tree. The second picture shows one bird flying away. There were three birds sitting on the tree. One bird flew away. How many were left?"

After the children answer the question, say:

3 minus 1 is 2.

Then introduce 3 – 1 = 2. Write 3 – 1 = 2 on the black - board. Explain the meaning of the minus (–) sign.

Tell the children that 3 represents the number of birds on the branch of the tree in the beginning, 1 represents the number of birds which flew away and 2 represents the number of birds which are left or which remained on the tree.

Discuss the pictures of rats given on the page. Ask:

How many rats are here in the picture on the left?

How many have run away? How many are left?

After the children answer the questions, say:

Four rats are there in the first picture. One rat has run away. Three rats are left. 4 minus 1 is equal to 3.

Then introduce 4 – 1 = 3. Write 4 – 1 = 3 on the blackboard. Tell the children that 4 represents the number of rats in the picture on the left, 1 represents the number of rats which moved away and 3 represents the number of rats left.

Discuss the pictures in the next two rows in the same manner and make the children generalise that subtraction is an operation involving taking away of some objects or

things from a collection and finding out the number of objects/things left in the collection.

Page 45

Draw attention to the collections given in the upper half of the page. Let the children observe carefully the collection of things/figures within the dotted lines shown in the first picture. Point out that the figures within the dotted line indicate that they are to be taken away from the entire collection. Tell the children that encircling/enclosing by dotted lines indicates the number of things/figures to be taken away. Focus their attention on the fact that the first picture indicates that two members of the collection of five have been taken away, leaving three members in the collection. Then introduce $5-2=3$ and write $5-2=3$ on the blackboard. Some children might say "five take away two is equal to three". This may be accepted at the initial stage. But they should be enabled to move quickly to the statement "five minus two is equal to three".

Discuss the other collections in the same manner. Tell the children that the things/figures encircled/enclosed by dotted line indicate that they are to be taken away from the collection.

Draw attention of the children to the collections of objects/figures shown in the lower half of the page. Tell them that in each row there are two collections of objects/figures and they are to find the difference between the number of objects/figures in the two collections. Point out that the difference between the number of objects/figures in two collections can be obtained by making a one-to-one correspondence between the objects/things in the collections and finding out the objects/things that are left unmatched.

Discuss the collections of toothbrushes and toothpastes. Point out that they have to compare the collection of eight toothbrushes with the collection of five toothpastes. Ask the children to match the objects in each collection by drawing a line from an object in the first collection to an object in the second collection. Ask them to find out the objects that are unmatched.

Instruct the children to trace over the dotted lines. When they finish, point out that there are three toothbrushes left unmatched. Tell them that the number of objects left unmatched indicates the difference between the number of objects in the two collections. Then introduce $8-5=3$. Point out that 8 represents the number of objects in the first collection; 5 represents the number of objects in the second collection and 3 represents the difference between the number of objects in the two collections.

Point out that the relation $8-5=3$ indicates " which collection has more objects and how many more?" Draw attention to the fact that there are three more toothbrushes than the number of toothpastes.

Draw attention to the collections of cups and saucers in the next row. Instruct the children to compare the number of objects in each collection. Let the children do this by tracing over the dotted lines. When they finish, point out that there are five cups left unmatched, indicating that the number of cups is more than the number of saucers. Point out that there are five more cups than the saucers and, therefore, the difference between the number of cups and saucers is 5 i.e. $7-2=5$.

Page 46

Draw attention to the collections at the top of the page. Let the children observe that three figures (◆) are within the dotted line. Tell the children that the dotted line indicates that the things/figures within it are to be taken away from the collection. Ask the children to identify the total number of things/figures in the collection. When they find that there are seven in all, draw their attention to the numeral 7 indicated below the figures. Now ask the children to identify the number of figures within the dotted line. When they find out that there are three, draw their

attention to the numeral 3. Remind them that the dotted line tells them to think about removing or taking away three figures from the collection of seven figures. Then ask:

> How many things/figures will be left if the things/figures within the dotted line are taken away from the entire collection?

When the children answer that four figures will be left, ask them to write the numeral 4 in the place holder. Then read out 7 – 3= 4 and write it on the blackboard.

Instruct the children to do the second exercise on their own. When they have finished, discuss and write 5 – 2 = 3 on the blackboard. Following this, instruct the children to complete the remaining exercises.

Draw attention to the collections of figures (□) shown in the pictures in the lower half of the page. Point out that in each exercise, they have to compare the two collections and find out the difference between the number of figures in the two collections. Tell them that they have to do this by first matching the figures in two collections to find out how many figures (□) in one collection are left unmatched. Ask the children to trace over the dotted lines. When they finish tracing, tell them there are two figures (□) in the first collection that have remained unmatched. Then ask:

> Which collection has more figures (□)? How many more figures does it have than the other?
>
> What is the difference between the number of figures (□) in the two collections?

When the children answer that there are two figures more in the first collection than in the second and, therefore, the difference between the number of figures in the two collections is two, ask them to write the numeral 2 in the place holder (□). Then write 4 – 2 = 2 on the blackboard and read it out.

Instruct the children to do the second exercise on their own. When they have finished, discuss and write 4 – 3 = 1 on the blackboard. Following this, ask the children to complete the remaining exercises. Remind the children that they should begin by matching the figures in the two collections and find out how many are left over or unmatched after they have completed the matching activity.

Page 47

Draw the attention of the children to the figures (△) in different rows in both the columns of the page. Point out that they are to think about taking away the figures (△) within the dotted line.

Call attention to the first row of figures (△) in the first column. Ask the children to note that one of the figures (△) is within the dotted line. Remind them that they are to think about removing or taking away the figure within the dotted line and ask:

> How many figures (△) will be left if the figure (△) within the dotted line is removed/taken away?

When the children find out that only one figure (△) will be left, read out 2 – 1 = 1. Point out that the numeral 2 represents the total number of figures (△), the numeral 1 at the right to or following the minus (–) sign represents the number of figures (△) within the dotted line and the numeral 1 following or to the right of the symbol = represents the number of the remaining figures (△). Tell them that if they begin with 2 and remove 1, 1 is left. Then write 2 – 1 = 1 on the blackboard. Also point out that the difference between the total number of figures (△) and the figures (△) within the dotted line is one, i.e. 2 – 1 = 1.

Draw attention to the figures (△) in the second row and ask:

> How many of the figures (△) will be left if the figures within the dotted line are removed?

After the children find out that two figures (△) would be left, read out 3 – 1 = 2 and write it on the blackboard. Point out that the numeral 3 represents the total number of figures (△), numeral 1 represents the number of figures (△) within the dotted line and numeral 2 represents the number of remaining figures (△) i.e. figures (△) which are outside the dotted line. Tell them that if they begin with 3 and remove 1, 2 are left.

Instruct the children to observe the third row. Point out that they began with three, removed two and had one left. Then read out 3 – 2 = 1 and write it on the blackboard.

Instruct the children to observe the remaining rows of figures (△) and write the subtraction facts for numbers from 4 to 9.

Page 48

Draw attention of the children to the exercises given in the upper half of the page. Explain the solved examples given at the top. Instruct the children to work out the first two exercises. After the children write their answers in the place holders (□) check their answers and instruct them to complete the remaining exercises.

Draw attention to the exercises given in the lower half of the page. Explain the solved example. Instruct the children to work out the first two exercises. Check their answers and then instruct them to complete the remaining exercises.

Page 49

Call attention of the children to the pictures at the top. Discuss the fact that there are three fishes in the bowl/vessel and two more are being put in. Now draw attention to the addition fact 3 + 2 = 5.

Refer to the next picture and focus the attention of the children on the fact that two fishes are being removed from the bowl/vessel. Draw attention to the subtraction fact 5 – 2 = 3. Let the children recognise that they started with three fishes, added two, subtracted two and finally three fishes remained. Direct the children's attention to the numeral 2 in both cases, which indicates that by adding two and then subtracting two they are back where they started.

Ask the children to observe the two collections of figures (□) in the picture given at the right side of the page. Direct attention to the first illustration and to the fact that they are to add the six □s to the three grey coloured figures (□) and the result is 6 + 3 = 9. Now direct attention to the second illustration and to the fact that they have to think about removing three of the □s since three of them have been placed within a dotted line. Let the children recognise that the numeral 6 indicates the difference of nine and three. Draw the attention of the children to the numeral 3 which indicates that they started with six, added three, subtracted three and finally ended up with six. In other words, they added three and subtracted the same number.

Draw attention to the exercises given in the lower half of the page. Discuss the examples. Explain the idea of adding and then subtracting the same number. Instruct the children to work out the first pair of exercises. Check their answers and then discuss, once again, the relation of the number added and subtracted. Instruct the children to complete the remaining exercises.

Page 50

Draw attention to the collection shown at the top of the page. Ask the children to identify the total number of figures, the number of grey coloured figures (□) and the number of pink coloured figures (□) . Point out that the collection of six figures is considered as a collection of four grey coloured figures (□) and collection of two pink coloured figures (□) Then explain the four different addition and subtraction possibilities for this particular collection and write them on the blackboard in pairs, as indicated. Focus attention on the pairing of the facts such as 4 + 2 = 6 and 6 – 2 = 4 and explain the

relationship between addition and subtraction. Point out that the number added and then subtracted is the same for a particular pair.

Discuss the remaining collections given on the page. Draw attention to the addition and subtraction possibilities for each collection and the relationship between addition and subtraction.

Discuss the exercises given in the lower half of the page. Explain the examples. Let the children complete the first two pairs of exercises. When the children complete these exercises, write them on the blackboard so that children can check their answers. Then instruct the children to complete the remaining exercises.

Page 51

Draw attention of the children to the statement 3 – 1 = 2. Tell the children that

3-1=2 can also be written as $\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$ Write 3–1=2 and $\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$ on the blackboard. Write 7-4=3 and $\begin{array}{r} 7 \\ -4 \\ \hline 3 \end{array}$ also on the blackboard.

Discuss the exercises involving subtraction given on the page..Explain the example given.Write the exercises and their answers on the blackboard so that children can check their answers.

Page 52

Discuss the pictures on the page. Say:

> There are four leaves on the branch of a plant. One has fallen on the ground. How many leaves are left on the branch of the plant?

After the children give the answer as three, ask them to write the numeral 3 in the space on the right. Then say:

> One more leaf has fallen on the ground. How many leaves are now left on the branch?

After the children answer "two", ask them to write the numeral 2 in the space on the right. Then say:

> One more leaf has fallen on the ground. How many leaves are now left?

After the children answer "one", ask them to write the numeral 1 above the line in the space on the right. Then say:

> One more leaf has fallen. How many leaves now remain on the branch of the plant?

The children's response will be "nothing or none". Then say:

> The number which represents nothing or none is called zero.

Point out that zero represents the absence of any object/thing in a collection.

Draw attention to the numeral 0 which represents zero and write it on the blackboard. Demonstrate the sequence of steps involved in writing the numeral 0 as indicated at the bottom of the page.

Demonstrate the way of writing 0 on the blackboard and ask children to write 0 in the space provided on the page.

Page 53

Draw attention to the pictures of balloons and say:

> There are three balloons. One went upward. How many are left? One more balloon went upward. How many are left?
>
> Again one more went upward. How many are left?

The children will answer "none" or "zero".

Discuss the pictures of balloons at the bottom of the page and say:

> The child is holding three balloons. All went upward. How many are left?

After the children reply "zero," write 3 – 3 = 0 on the blackboard.

Page 54

Draw attention to the figures (▲) given in both the columns on the page. Focus attention on the figures (▲) in the first row in the left column. Point out that one of the figures (▲) is within the dotted line and that they are to think about removing or taking away this figure (▲) within the dotted line. Let the children observe the subtraction fact 2 − 1 = 1.

Then draw attention to the ▲s in the second row and ask:

How many ▲s will be left if the ▲s within the dotted lines are removed?

When the children discover that no ▲s will be left, read 2 − 2 = 0 and write it on the blackboard.

Draw attention to the figures (▲) in the fifth row and ask:

> How many figures (▲) will be left if the figures (▲) within the dotted line are removed?

After the children discover that no figure (▲) will be left, write 3 − 3 = 0 on the blackboard.

Discuss the figures (▲) in other rows in a similar way and let the children recognize that 4 − 4 = 0, 5 − 5 = 0, 6 − 6 = 0, 7 − 7 = 0, 8 − 8 = 0, and 9 − 9 = 0.

Draw attention to the figure (▲) in the second column. Focus attention on the second row. Let the children observe that no figure (▲) is encircled by dotted line and therefore, no figure (▲) is to be removed or to be taken away. Then explain that 2 − 0 = 2. Point out that numeral 2 represents the number of figures which are not encircled by the dotted line, 0 indicates that no figure (▲) is taken away or removed and 2 represents the number of figures (▲) that are left. Similarly, introduce 3 − 0 = 3, 4 − 0 = 4, 5 − 0 = 5, 6 − 0 = 6, 7 − 0 = 7, 8 − 0 = 8 and 9 − 0 = 9.

Page 55

Draw attention to the ▲s in the first column. Focus attention on the first row. Point to the statement 1 + 1 = 2. Tell the children that the numeral 1 on the left represents the number of the grey coloured ▲s and the numeral 1 following the + sign represents the number of pink coloured ▲s and the numeral 2 represents the total number of ▲s. Then draw attention to the ▲s in the second row and to the statement 2 + 0 = 2. Point out that the numeral 2 represents the number of grey coloured ▲s, the numeral 0 represents the number of pink coloured ▲s, and the numeral 2 represents the total number of ▲s.

Discuss the figures (▲) in the remaining rows and then introduce 3 + 0 = 3, 4 + 0 = 4, 5 + 0 = 5, 6 + 0 = 6, 7 + 0 = 7, 8 + 0 = 8, and 9 + 0 = 9.

Draw attention to the figures (▲) in the second column and to the statement 1 + 1 = 2. Point out that the numeral 1 on the left represents the number of grey coloured ▲s, the numeral 1 following the + sign represents the number of pink coloured ▲s and the numeral 2 represents the total number of ▲s. Draw attention to the figures (▲) in the second row and to the statement 0 + 2 = 2. Point out that since there is no pink coloured figure (▲) the numeral on the left is 0.

Discuss the figures (▲) in the remaining rows and introduce 0 + 3 = 3, 0 + 4 = 4, 0 + 5 = 5, 0 + 6 = 6, 0 + 7 = 7, 0 + 8 = 8 and 0 + 9 = 9.

Ask a child to add 0 to a number. Write 3 + 0 = 3 or 0 + 3 = 3 on the blackboard. Let the children discover that the sum of any number and zero is the number itself.

Page 56

Draw attention to the exercises given in the upper and lower halves of the page. Explain the solved examples. Then instruct the children to solve the first two exercises. Check their answers and then instruct them to complete the remaining exercises.

Page 57

Draw attention to the subtraction tables shown on the page. Draw the first table on

the blackboard. Explain the procedure of filling in the missing numerals in the subtraction table. Point out that they should begin with an entry at the top and move to an entry on the left, to find the difference between the two entries as illustrated by arrows in the first table. Tell the children that the numeral 2 indicated in the third row represents $3-1=2$. Instruct the children to complete all the subtraction tables by writing the missing numerals. Instruct them not to make any entries in the shaded portion.

Direct children to complete the addition tables given on the lower half of the page. Check whether they have entered the numerals in all the tables correctly. If not, guide them.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/responses. Provide remedial activities/instruction to ensure the attainment of the learning outcomes by each child.

UNIT 7 Numbers from Ten to Twenty

Learning Outcomes

After going through this unit, the learner should be able to

- read and write numerals for numbers up to twenty.
- recognise all possible combinations of two numbers from one to nine whose sum is ten (addition facts of 10).
- write numerals 1 to 20 in ascending/descending order of numbers.
- state the number(s) and write the numeral(s) corresponding to them in ascending/descending order, starting from a number in between one and twenty.
- write the numeral(s) corresponding to the number(s) which come(s) in between two given numbers.
- indicate which of the two given numbers between one and twenty is greater/less than the other.
- add two numbers, the sum not exceeding eighteen.
- subtract a number from another greater number (greater number not exceeding twenty)

Oral Vocabulary

Ten, Eleven, Twelve, Thirteen, Fourteen, Fifteen, Sixteen, Seventeen, Eighteen, Nineteen, Twenty, one more than, one less than.

Teaching - learning Activities

In this unit, numbers are extended up to twenty by counting activities. The addition and subtraction operations are also extended to include numbers greater than nine. In respect of addition, the operation is restricted to addition involving two numbers and the sum not exceeding 18. In the case of subtraction, the operation is limited to those involving subtraction of a number not exceeding nine from another number not exceeding 18.

Page 58

Draw the attention of the children to the pictures at the top of the page. Introduce the number nine as 8 and 1 more. Then move to the next set of pictures. Let the children count the number of boys in the picture and express it as nine and one more. Make the children recognise the numeral 10 for the number 'ten'. Explain that the numeral 10 is used to

denote the number of boys in the picture on the right. Move to the pictures in the next row and explain that the numeral 10 is used to indicate the number of figures (○) in the picture on the right.

Let the children count the number of figures(□) in the pictures given at the bottom of the page. Focus attention on the fact that the numeral 10 denotes the total number of figures (□) in the picture on the right.

Explain the sequence of steps involved in writing the numeral 10 and instruct the children to write the numeral 10 in the space provided.

Page 59

Draw attention of the children to the rows of figures (△) at the top. Point out that in the first row there are ten figures(△),nine of which are grey coloured and one is pink coloured. Focus attention on the addition fact $9 + 1 = 10$. Point out that the numeral 9 denotes the number of the grey coloured figures (△) and the numeral 10 denotes the total number of the grey coloured and the pink coloured figures (△).

Instruct the children to observe the grey coloured and pink coloured figures (△) in the second row and to the addition fact $8+2=10$. Point out that the numeral 8 denotes the number of grey coloured figures (△) and the numeral 2 denotes the number of pink coloured figures (△).

Draw attention to the figures (△) in the remaining rows and ask them to write the addition facts for 10. Remind the children that in the addition facts, the first numeral from the left denotes the number of grey coloured figures (△). The second numeral following the + sign denotes the number of pink coloured figures (△) and the numeral 10 to the right of the = sign denotes the total number of figures (△). Instruct the children to write all the addition facts for 10.

After the children complete the writing of addition facts for 10, draw attention to the following addition facts:

$9 + 1 = 10$	$1 + 9 = 10$
$8 + 2 = 10$	$2 + 8 = 10$
$7 + 3 = 10$	$3 + 7 = 10$
$6 + 4 = 10$	$4 + 6 = 10$

Make the children discover that two numbers added in either order give the same sum.

Draw attention to the exercises given on the left of the page. Explain the examples and instruct the children to complete the exercises.

Draw attention to the figures (△) given in the lower half of the page. Point out that they are to think about taking away the figures (△) within the dotted line.

Instruct the children to observe the figures (△) in the first row and to the subtraction fact given at the right of these. Ask:

> How many of the figures (△) will be left if the figures (△) within the dotted line are removed?

When the children find out that nine figures (△) will be left, draw their attention to the subtraction fact $10-1=9$. Point out that the numeral 10 denotes the total number of figures (△), numeral 1 denotes the number of figures (△) within the dotted line and the numeral 9 denotes the number of figures (△) left or the difference between the total number of figures (△) and the figures (△) within the dotted line. Tell them that if they have ten figures (△) and one of them is removed, nine will be left.

Repeat the activity with the figures (△)in the second row and let the children discover the subtraction fact $10-2= 8$.

Instruct the children to observe the remaining row of figures (△) and to write the remaining subtraction facts for 10.

Page 60

Draw the attention of the children to the figures (○) in the first picture in the left column. Let them count the number of figures

and discover that the collection consists of ten and one more figure . Then introduce ten and one more as eleven and draw attention to the numeral 11. Explain that the numeral 11 denotes the total number of figures(◎) shown in the picture.

Discuss the next picture and instruct the children to count the number of figures (◎) in the picture. Let them discover that the collection contains eleven and one more figure (◎). Then introduce eleven and one more as twelve and focus attention on the numeral 12. Explain that the numeral 12 denotes the number of ◎s shown in the picture.

Discuss the other collections shown on the page and introduce the number names thirteen to twenty and the numerals 13 to 20 in the same manner in which the numbers eleven and twelve and the numerals 11 and 12 were introduced. While extending the numbers up to twenty through counting activities let the children discover that a given number is one more than the previous number. For example, thirteen is twelve and one more, fourteen is thirteen and one more, ..., twenty is nineteen and one more. Ensure that the students recite numbers up to twenty in the correct sequence. Let the children also discover the fact that a given number is one more than the preceding number and one less than the succeeding/ next number in the counting sequence.

Page 61

Draw attention to the numerals 11 to 20 on the page and explain the sequence of steps involved in writing them. Instruct the children to write each numeral in the space provided. Ask the children to write each numeral from 10 to 20, at least ten times on their slates or in their notebooks.

Page 62

Discuss the exercises given on the page. Explain the given examples. Ask the children to observe the pattern and complete the exercises.

Page 63

Draw attention to the exercises given on the page. Explain the examples and direct the children to complete the remaining exercises.

Draw attention to the tables given in the lower half of the page. Instruct the children to write the missing numerals. Let the children discover that they are to write numerals in the ascending order of numbers in the first table and in the descending order of numbers in the second table.

Page 64

Instruct the children to join the dots. Ask them to move from the numeral 1 to 15 in the first case and from 20 to 1 in the second case.

Draw attention to the exercises given in the lower half of the page. Explain the examples. Point out that in the case of exercises in the first column from the left, they are to write the numeral for the number that comes in between the two numbers; in the case of exercises in the second column from the left, they are to write the numeral for the number that comes after the given number; in the case of the exercises in the third column, they are to write the numeral for the number that comes before the given number and in the case of exercises in the last column, they are to write the numerals for the numbers that come before and after the given number.

Page 65

Call attention of the children to the exercises given in the upper half of the page. Explain the examples. Instruct the children to complete the exercises.

Draw attention to the exercises given in the lower half of the page. Explain the examples and let the children complete the remaining exercises and discover the addition facts for numbers from eleven to eighteen.

Page 66

Discuss the exercises given in the upper half of the page. Explain the examples and instruct the children to complete all the exercises.

Draw attention to the addition table and instruct the children to fill in the missing numerals in the table.

Page 67

Draw attention to the exercises given. Explain the examples. Instruct the children to complete the exercises.

Page 68

Discuss the exercises given in the upper half of the page. Explain the examples and instruct the children to complete all the exercises.

Draw attention to the subtraction table Instruct the children to fill in the missing numerals in the table.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/ responses. Provide remedial activities/ instruction to ensure the attainment of the learning outcomes by each child.

UNIT 8 Numbers up to Hundred

Learning Outcomes

After going through this unit, the learner should be able to

- read and write numerals up to 100 in ascending/descending order of numbers.
- write the numerals for the numbers which come in between two given numbers.
- state which of the two given numbers (in between one and hundred) is greater/less and indicate the relation by using the symbol > or <

Oral Vocabulary

Tens, Ones, Twenty-one, Twenty-two,....................., Ninety-nine and Hundred.

Teaching-learning Activities

In this unit, numbers are extended upto hundred by counting activities. The numbers are also introduced in terms of tens and ones. An informal introduction to place value is also given.

Page 69

Draw the attention of the children to the collections of objects shown in the pictures at the top of the page. Focus attention on the pictures of objects on the left and right sides of the page and instruct the children to count the number of objects in each case. Make the children count the objects shown in the picture on the left and when they have counted ten of them, point out that the ten objects could be put together to constitute a single unit of 1 ten as shown in the picture on the right. Then point out that 1 ten is equivalent to 10 ones or 10 ones is equivalent to 1 ten.

Draw attention to the pictures of match-sticks. Again make the children recognise that they may count individual match-sticks and when they have ten of them, they could make a bundle of them so as to have a single unit of 1 ten. Point out again that 1 ten is equivalent to 10 ones or 10 ones is equivalent to 1 ten.

Draw attention of the children to the collection of figures (●). Ask them to count

all the figures (○). When they find that there are ten figures, point out that they could be considered as a single unit of 1 ten.

Ask the children to observe the pictures of ten objects in the third row. Point out that the collection represents 1 ten.

Draw attention of the children to the collections of figures (○) given in the lower half of the page. Discuss the collections of figures in the first row in the column on the left. Ask the children to count all the figures (○). Express the total number of figures in terms of tens and ones. Point out that 1 ten and 1 one is eleven or 10 +1 = 11.

Ask children to observe the collections of figures (○) in the next row. Instruct the children to count all the figures in tens and ones. Introduce 1 ten and 2 ones as twelve or 10 + 2 = 12.

Discuss the collections of figures in the remaining rows in the columns on the left and in the column on the right in the same manner and introduce 1 ten and 3 ones as thirteen or 10 + 3 = 13, 1 ten and 4 ones as fourteen or 10 + 4 = 14, 1 ten and 5 ones as fifteen or 10 + 5 = 15, 1 ten and 6 ones as sixteen or 10 + 6 = 16. Point out that every given number is one more than the preceding number and whenever one adds one to a given number, the next number is obtained. Draw attention to the numerals from 11 to 16 and ask children to write them on their slates/ notebooks at least ten times.

Page 70

Draw attention of the children to the collections of figures (○) given in the first row in the column on the left side of the page. Introduce 1 ten and 7 ones as seventeen or 10 + 7 = 17, 1 ten and 8 ones as eighteen or 10 + 8 = 18 , and 1 ten and 9 ones as nineteen or 10 + 9 = 19.

Discuss the collections of figures in the next row. Lef the children recognise that there are two collections, each one having ten figures. Introduce 2 tens as twenty or 10 + 10 = 20. Focus the attention on the numerals 17, 18, 19 and 20 and ask children to write them on their slates/notebooks at least ten times.

Instruct the children to count the figures (○) in the subsequent rows in terms of tens and ones. Introduce numbers from twenty-one to twenty-eight and the numerals from 21 to 28 in the same manner in which the numbers from eleven to twenty and the numerals from 11 to 20 were introduced. Introduce 2 tens and 1 one as twenty-one or 20 + 1 = 21, 2 tens and 2 ones as twenty-two or 20+2=22, 2 tens and 3 ones as twenty-three or 20 + 3 =23 and 2 tens and 7 ones as twenty-seven or 20 + 7 = 27 and 2 tens and 8 ones as twenty-eight or 20 + 8 = 28.

Page 71

Discuss the collections of the figures (○) in the first row in the column on the left. Introduce 2 tens and 9 ones as twenty-nine or 20 + 9 = 29.

Instruct the children to count the figures (○) in the collections in the remaining rows and express the number of figures (○) in tens and ones. Introduce numbers from thirty-one to thirty-nine and the numerals 31 to 39 in the same manner in which the numbers from twenty-one to thirty and the numerals from 21 to 30 were introduced. Introduce 3 tens and 1 one as thirty-one or 30 + 1 = 31, 3 tens or 2 ones as thirty-two or 30 +2 = 32, ..., and 3 tens and 9 ones as thirty-nine or 30+9 = 39. Point out that each number is one more than the previous number.

Draw attention to the figures (○) in the last row in the column on the right. Let the children count all the figures (○) and then express them in tens and ones. Introduce 4 tens as forty and 30+ 10 = 40.

Page 72

Introduce the numbers from forty-one to fifty and the numerals 41 to 50 in the same manner in which the numbers from twenty-one to forty and the numerals from 21 to 40 were introduced. Introduce 4 tens and 1 one as forty-one or 40+ 1 = 41, 4 tens and 2 ones as forty-two or 40+ 2 = 42...................., 4

tens and 9 ones as forty-nine or 40+ 9 = 49 and 5 tens as fifty or 40+ 10 = 50.

Page 73

Discuss the two exercises given on the page. Instruct the children to write the numerals for the missing numbers in the table.

Page 74

Introduce the numbers from fifty-one to ninety and the numerals 51 to 90 in the same manner in which numbers from twenty-one to fifty and the numerals from 21 to 50 were introduced. Introduce 5 tens and 1 one as fifty-one or 50+1 = 51, 5 tens and 2 ones as fifty-two or 50+ 2 = 52,...................., 8 tens and 9 ones as eighty-nine or 80+9 = 89 and 9 tens as ninety or 80+ 10 =90.

Page 75

Introduce the numbers from ninety-one to hundred and the numerals 91 to 100 in the same manner in which numbers from fifty-one to ninety and numerals from 51 to 90 were introduced.

Draw attention of the children to the exercises given in the lower half of the page. Instruct the children to write the numerals for the missing numbers in the table. Point out the ascending order of numbers.

Page 76

Discuss the exercises given on the upper half of the page. Explain the examples and instruct the children to write the numeral which denotes the total number of figures (◯) in the collection.

Instruct the children to work out the exercises given in the lower half of the page. Ask children to write the numeral for 1 ten, numeral for 2 tens, ..., numeral for 9 tens and numeral for 10 tens.

Page 77

Discuss the table given on the page. Draw attention to the descending order of numbers and instruct the children to write the numerals for the missing numbers in the table.

Call attention to the exercises given in the lower half of the page. Explain the examples and instruct the children to complete all the exercises by writing appropriate numerals in the space (▢) provided.

Page 78

Draw attention to the exercises given at the top of the page. Explain the examples and instruct the children to complete the remaining exercises.

Discuss the exercises given in the lower half of the page. Explain the examples. Point out that in the case of the exercises in the first column from the left, the children are to write the numeral for the number that comes in between the two given numbers. Explain that in the case of the exercises in the second column , they are to write the numeral for the number that comes just after the given number, in the case of the exercises in the third column, they are to write the numeral for the number that comes before the given number and in the case of the exercises in the column on the right, they are to write the numerals for the numbers that come before and after the given number.

Page 79

Instruct the children to complete all the exercises given on the page. Explain the examples.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/ responses. Provide remedial activities/ instruction to ensure the attainment of the learning outcomes by each child.

UNIT 9 More about Addition and Subtraction

Learning Outcomes

After going through this unit, the learner should be able to

- add two or three numbers, the sum not exceeding 99 (without carrying).
- subtract a number from another greater number (without borrowing and the greater number not exceeding ninety-nine).

Oral Vocabulary

Sum, Difference, 1 - digit number, 2-digit number

Teaching - learning Activities

This unit introduces ideas of addition and subtraction involving 2-digit numbers.

Page 80

Draw attention to the examples involving addition of a 2 - digit number and a 1 - digit number. Instruct the children to add the numbers by forward counting. They may add by following the method used in the examples or by finger counting.

Discuss the exercises given in the lower half of the page. Explain the examples and instruct them to complete all the exercises. Tell the children that they could make use of the principle that "two numbers could be added in either order" while working out the exercises. Point out that 6 + 37 is the same as the 37 + 6 and the sum would be 43 in both the cases.

Page 81

Draw attention of the children to the two collections of ten grey coloured figures (●) and the collection of ten black coloured figures (●) given at the top of the page. Let the children identify the number of figures in each collection and express them in tens. Focus attention on the statement 20+10 = 30.

Draw attention to the collections of figures(●) given on the right side of the page. Let the children identify the number of figures (●) in each collection and express the total number of figures in tens. Focus attention to the statement 30+20=50.

Repeat the activity with the collections of figures in the next row.

Discuss the exercises given in the lower half of the page. Explain the examples. Instruct the children to complete the exercises and write the sums in ▢

Page 82

Draw attention of the children to the collections of figures (●) shown in the pictures in the left and the right columns. Explain the procedure followed in the addition of three 1-digit numbers. Draw attention to the exercises given at the bottom of the page. Explain the examples and instruct the children to complete all the exercises.

Page 83

Explain to the children the procedure followed in the addition of three 1-digit numbers. Instruct them to complete the exercises given in the lower half of the page.

Page 84

Let the children observe the collection of 14 figures (●) and the collection of 22 figures. Point out that for 14 there is one collection of ten figures (●) and collection of four figures (●), and for 22 there are two collections of ten figures (●) and a collection of two figures. Let the children observe that 14 means 1 ten and 4 ones, 22 means 2 tens and 2 ones and the total of these amounts to 3 tens and 6 ones i.e. 30+6=36. Discuss the regrouping of the numbers in tens and ones. Refer to the vertical notation given on the left, the regrouping in tens and ones in the middle and the solution given on the right.

Instruct the children to observe the examples given in the lower half of the page. Let the children discover that to find the sum of two 2-digit numbers, they have to add the numbers in the one's column first and then add the numbers in the ten's column.

Page 85

Draw attention of the children to the exercises. Explain the examples and instruct the children to work out the exercises.

Page 86

Discuss with the children the idea of counting in 1s, 2s, 3s, 4s, 5s, and 10s. Draw attention to the tables and ask them to fill in the missing numbers in the tables. Let the children discover the pattern in each table.

Page 87

Draw attention of the children to the collections of figures (O) given at the top of the page. Let the children identify the number of figures (O) within the dotted line and outside the dotted line. When they find that there are 30 figures (O) or 3 collections of tens in all within the dotted line, point out that they should think about taking away or removing these figures. Let them find out the number of figures that will be left if the figures within the dotted line are taken away.

Discuss the collections of figures (O) in the next row. Instruct the children to identify the total number of figures in the entire collection, the number of figures that are to be removed and the number of figures that will be left after 20 figures are removed.

Instruct the children to complete the exercises given in the lower half of the page. Explain the examples.

Page 88

Discuss the collection of figures (O) given at the top of the page. Let the children identify the total number of figures within the dotted line. Point out that they are to think about subtracting 4. Instruct them to subtract 4 ones from 2 tens and 6 ones. Let them find out that 2 tens and 2 ones, i.e. 22 will be left.

Discuss the collection of figures (O) in the next row in the same manner.

Discuss the exercises given in the lower half of the page. Explain the examples and instruct the children to complete the exercises.

Page 89

Ask the children to observe the collections in the column on the left and identify the number of figures (O) in the collections as 46. Now focus attention on the collections of figures within the dotted line. Point out that they are to think about removing these figures and think about subtracting 20. Let the children identify that 46 means 4 tens and 6 ones i.e. $40+6=46$ and 20 means 2 tens and 0 ones i.e. $20+0=20$. Instruct them to subtract 2 tens and 0 one from 4 tens and 6 ones. Let them find out that 2 tens and 6 ones will be left and, therefore, the answer will be 26. Discuss the collection given in the column on the right in the same manner.

Draw attention of the children to the exercises in the lower half of the page. Explain the examples. Instruct the children to work out the exercises.

Page 90

Draw attention of the children to the collection of figures (O) in the column on the left. Let the children identify that the total number of figures in the collection is 38. Point out that the figures within the dotted line indicate that they are to be removed. Let the children recognise that 38 is 3 tens and 8 ones and 24 is 2 tens and 4 ones. Instruct them to subtract 2 tens and 4 ones from 3 tens and 8 ones. Let them find out that 1 ten and 4 ones, i.e. 14 will be left.

Discuss the other examples. Let the children discover that to find the difference, they have to column subtract the digits representing the ones and column subtract the digits representing the tens.

Discuss the exercises given in the lower half of the page. Explain the examples.

Instruct the children to complete the exercises. Remind them that they can find the difference between the two numbers by column subtraction involving the digits representing the ones and the digits representing the tens and by using the subtraction facts learned earlier.

Page 91

Discuss the exercises given on the page. Explain the examples. Instruct the children to complete all the exercises

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/ responses. Provide remedial activities/ instruction to ensure the attainment of the learning outcomes by each child.

UNIT 10 Indian Currency

Learning Outcomes

After going through this unit, the learner should be able to

- distinguish between coins of different denominations.
- make collections of different coins having the same value.
- find the total value of a given collection of coins.
- recognise currency notes of different denominations.

Vocabulary

Paisa, Paise, Rupee, Rupees

Teaching-learning Activities

This unit is meant to provide children with experiences in dealing with collections of coins.

Page 92

Discuss the pictures of coins given on the page. Explain the characteristics of each coin. Let the children observe the head and tail of each coin. Provide opportunities to children to handle coins of different denominations.

Page 93

Draw attention to the coins shown within the pink-coloured line and the combinations of coins (outside the pink-coloured line) which make the same value as that of the coin within the pink-coloured line. Use collections of original coins, if possible, and make collections of coins which will have the value as that of a 25-paisa coin, 20-paisa coin and 10-paisa coin.

Page 94

Draw attention to the collections of coins shown on the page. Instruct the children to find out the total value of the coins in each collection.

Pages 95 and 96

Draw attention to the pictures of currency notes. Explain the main features of the currency notes of different denominations. Let the children observe both sides of the currency notes of different denominations. Show original currency notes to the children, if possible.

Prepare review exercises/test items to assess the attainment of learning outcomes expected to be attained by the learners after going through the unit. After the children complete the exercises check their answers/ responses. Provide remedial activities/ instruction to ensure the attainment of the learning outcomes by each child.

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
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